Ontario

Ontario Geological Survey
Open File Report 6150

Report of Activities, 2004 Resident Geologist Program

Kirkland Lake Regional Resident Geologist Report: Kirkland Lake District

2005

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Resident Geologist Program

Kirkland Lake Regional Resident Geologist Report:
Kirkland Lake District

by

G. Meyer, G.P.B. Grabowski, D.L. Guindon and E.C. Chaloux

2005

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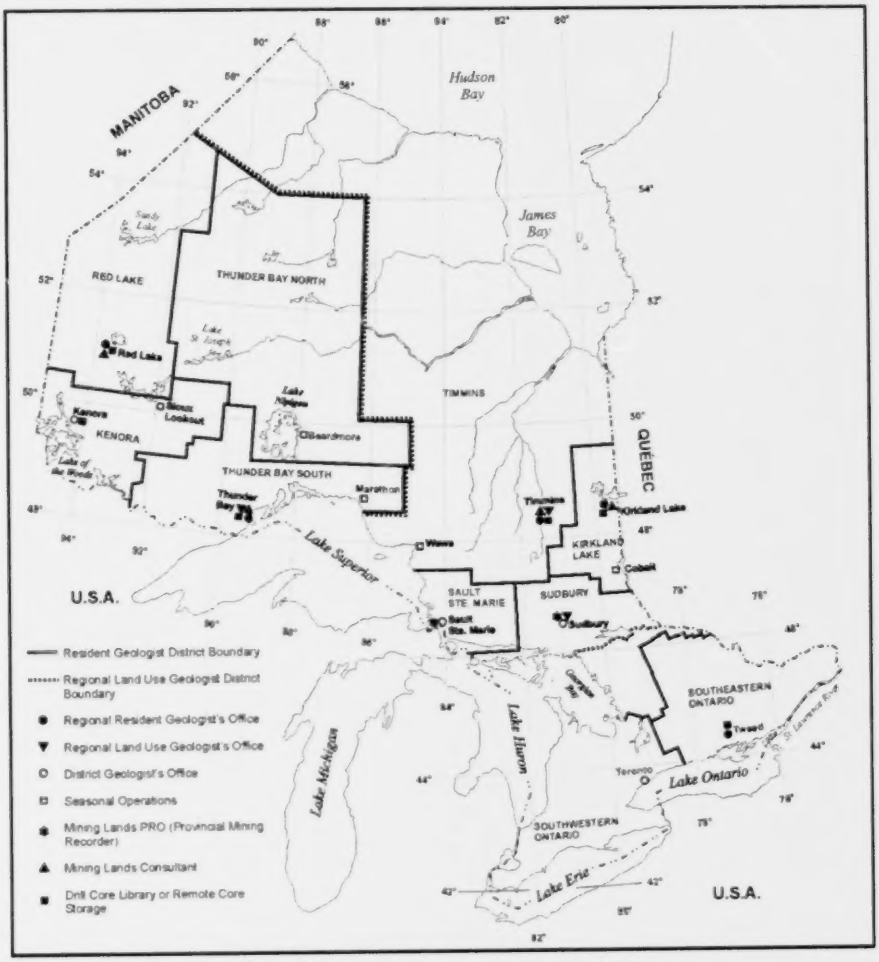

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Ontario

Ontario Geological Survey
Regional Resident Geologist Program

Kirkland Lake Regional Resident Geologist (Kirkland Lake District)–2004

by

G. Meyer, G.P.B. Grabowski, D.L. Guindon and E.C. Chaloux

2005

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Kirkland Lake Regional Resident Geologist (Kirkland Lake District)–2004

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INTRODUCTION

The price of gold in 2004 ranged from a low of US$375.00 to a high of US$453.05 per ounce and the cumulative average was SUS409.72, a rise of US$46.34 from the previous year (www.kitco.com).

Total gold production in 2004 from all producers in the Kirkland Lake Regional Resident Geologist District (see "Mining Activity – Precious Metals", and Tables 2 and 9) was 4 772 175 grams of gold or 153 429 ounces of gold. This represents a decrease of 15% from 2003. Total historic gold production in the district is 41 549 384 ounces of gold recovered from 139 128 740 tons of ore plus 202 399 ounces of gold from 4 292 634 tons of tailings.

Two gold mines operated east of Matheson close to the Quebec border and one in Kirkland Lake. These are the Holloway Mine, owned by Newmont Mining Corporation and Teddy Bear Valley Mines Limited, the Holt-McDermott Mine, owned by Barrick Gold Corporation (ceased operations and mine and mill sold to Newmont Mining Corporation in 2004) and Kirkland Lake Gold Inc.'s Kirkland Lake properties, consisting of the former Macassa, Kirkland Lake, Teck Hughes, Lake Shore and Wright Hargreaves properties. Mining and milling operations in the Kirkland Lake Resident Geologist District at the end of the year directly employed approximately 500 people.

Extender Minerals of Canada Ltd. operated an underground barite mining operation in North Williams Township.

Several junior mining companies explored large mining claim holdings within the Timiskaming Structural Deformation Zone (TSDZ) for their diamond potential. Contact Diamond Corporation (former Sudbury Contact Mines Limited) obtained encouraging results from the mini bulk sample extracted at the 95-2 kimberlite pipe. The Company also discovered two additional kimberlite pipes west of Temiskaming Shores (New Liskeard).

Mustang Minerals Corp. continued to explore a nickel property optioned from Outokumpu Mines Inc. in Bannockburn Township for Kambalda and Mount Keith styles of nickel mineralization.

In 2004, there were approximately134 active exploration projects in the Kirkland Lake Regional Resident Geologist District (Tables 3 and 4).

At the end of 2004 there were 7303 active mining claims totalling 28 563 units in the Larder Lake Mining Division (see Table 1). A total of 242 assessment work reports were incorporated into the Kirkland Lake Assessment File system (Table 3). These reports, approved for assessment credits, represent $10 584 733 in exploration expenditures and are an increase of 116% over 2003. One hundred and three (103) records of publications were added to the library database (Table 6).

MINING ACTIVITY – PRECIOUS METALS

Canamet Resources Company – Canadaka Mill

Canamet Resources Company prepared the old Canadaka mill site for a screening and bagging operation. Silver-cobalt waste residue was sold as a cobalt feedstock to a Chinese smelter. A total of 2000 t were shipped in 2004 and another 10 000 t are at the site. The contractor is R. Damiani of Damiani Welding and Contracting of Cobalt.

The project is referred to as Phase 1. Phase 2 is a plan to potentially bring some of the area silver mines and the former Canadaka mill back on line to produce an 8% cobalt concentrate for sale to the same Chinese smelter. The company has a potential long-term contract to supply this smelter (J. Reid, personnal communication, 2005).

Barrick Gold Corporation – Holt-McDermott Mine

Barrick Gold Corporation exhausted its ore reserves at the Holt-McDermott Mine and ceased mining operations in September of 2004. Production at the mine during the final year was 54 578 ounces of gold from 394 100 tons of ore milled at a recovered grade of 0.149 ounce per ton gold. Gold recovery at the mill was 93.1%. Newmont Canada Limited acquired the Holt-McDermott Mine and mill facility on October 8, 2004.

About 200 jobs were lost due to the mine closure, however, 25 employees transferred to Newmont's Holloway mining/milling operation (*Northern News*, October 15, 2004; *The Globe and Mail*, Friday, October 17, 2003, p.B5; Barrick Gold Corporation, Third Quarter Report, 2004 – October 26, 2004; R. Durham, Newmont Mining Corporation, personal communication, 2005).

Kirkland Lake Gold Inc.

By April 30, 2004 (the end of the company's fiscal year), Kirkland Lake Gold Inc.'s production on its Kirkland Lake properties totalled 19 266 ounces of gold from 81 727 tons of ore with a mill recovery rate of 95.95%. Reserves at fiscal year end were calculated as follows: proven 586 000 tons at 0.42 ounce Au per ton (246 120 ounces) and probable 735 000 tons grading 0.52 ounce Au per ton (382 200 ounces). Resources were determined to be: measured 924 000 tons at 0.37 ounce Au per ton (341 880 ounces), indicated 2 329 000 tons at 0.30 ounce Au per ton (698 700 ounces) and inferred 643 000 tons grading 0.35 ounce Au per ton (225 050 ounces).

During fiscal 2003-2004, Kirkland Lake Gold completed 9411 feet of drifting and 3603 feet of raises. Underground exploration drilling and definition drilling totalled 159 138 feet in 589 holes and surface drilling totalled 72 252 feet in 133 holes. During calendar year 2004, 465 321 feet were drilled, of which 233 462 feet was surface drilling.

A new north-south-striking zone, the Lower D Zone (formerly South Porphyry Zone), was discovered 1500 to 1800 feet south of the main mine workings. This zone is located more than 2000 feet down-dip from the previously discovered Upper D Zone (formerly D Zone). The best intersection on the Lower D Zone is 1.07 ounces Au per ton over a core length of 17.0 feet (11.4 feet true width). The Upper D Zone reserves have doubled since August 2003 and the combined probable reserve, indicated resource, and inferred resource for this zone are 129 370 ounces of gold contained in 162 212 tons of ore. Subsequent to the new discovery, 10 holes, totalling 15 000 feet of drilling, was planned from multiple levels to test the continuity of gold mineralization between the two zones.

Significant mineralization was intersected in a north-trending structure 1600 feet south of the Macassa mine workings, east of the Macassa No. 2 shaft, from the -4500 level. Drill hole 45-911A returned an intersection of 26.21 oz gold over 6.0 feet (uncut) and included 102.46 ounces over a 1.5 feet core length. Drilling also extended the limits of several other veins at the -4200 level near the No. 2 shaft.

The company discovered another new auriferous north-trending structure about 2000 feet southeast of Macassa's No. 2 shaft, 1400 feet south of the South Break and 2000 feet south of the Main Break. Diamond drill hole SV-04-08

returned an intersection of 0.50 ounce Au per ton over 29.0 feet at a vertical depth of 160 feet. The mineralized zone is composed of greywacke and conglomerate with about 15% finely disseminated pyrite and visible gold.

At the former Kirkland Lake Minerals property, the company targeted the Main Break in a surface diamond-drilling program. Drill hole KM-04-23C intersected 1.02 ounces Au per ton over 8.4 feet at a vertical depth of 900 feet below surface.

Capital expenditures for fiscal 2004 totalled $11 113 659. Planned fiscal 2005 development expenditures are $8 800 000, drilling expenditures $9 230 000 and definition drilling $1 400 000.

The mine employed 231 (April 2004) and 261 at the end of the same year (Kirkland Lake Gold Inc., press releases, November 9 and December 15, 2004; http://www.klgold.com/; M. Sutton, Kirkland Lake Gold Inc., personal communication, 2005).

Newmont Mining Corporation and Teddy Bear Valley Mines Limited – Holloway Mine

In 2004, the Newmont Mining Corporation's and Teddy Bear Valley Mines Limited's Holloway Mine in Holloway Township mined 515 001 t of ore, which was milled at Barrick Gold Corporation's Holt-McDermott mill. A total of 79 585 ounces of gold were produced at a mill recovery rate of 92.5%.

Proven ore reserves at the mine, on December 31, 2004, were 470 549 t grading 5.698 g/t Au or containing 86 209 ounces of gold. Probable reserves were 869 377 t grading 6.514 g/t Au containing 182 078 ounces of gold. Resource estimates at the end of 2004 were defined as: measured 160 192 t grading 3.84 g/t Au or 19 777 ounces of gold, indicated 243 067 t grading 5.308 g/t Au or 41 481 ounces of gold and inferred 53 391 t at 6.451 g/t Au or 11 074 ounces of gold.

During 2004, the joint venture partners completed 6401 m of drifting and 88.3 m of raises. Underground exploration diamond drilling totalled 11 892 m in 46 holes and underground definition diamond drilling totalled 33 943 m in 535 holes. Surface exploration drilling totalled 410 m in 4 holes.

Capital expenditures for the year amounted to $11 778 441 million. The proposed capital and operation budget for 2005 is $8 419 432 and in addition $2 975 125 is budgeted for exploration drilling and $1 399 704 for definition drilling.

Newmont Canada Limited acquired the Holt-McDermott Mine and milling facility from Barrick Gold Corporation. This transaction took effect October 8, 2004. The Holt-McDermott facility is to be operationally merged with the existing (and adjacent) Newmont Canada Limited - Holloway Mine facility, with both entities using the Holloway Mine business name (*Northern News*, October 15, 2004).

At year-end, the mine employed 186 people (http://www.newmont.com/en/; S. Picard, Newmont Mining Corporation, personal communication, 2005).

Polymet Resources Inc.

The Polymet plant is fully operational and has undergone repairs and further upgrades in the crushing/grinding circuit and in the drying circuit, but the plant is essentially under care and maintenance ready for new business.

Some limited processing work was conducted for Durall/WCC Refinery and Avalon Ventures with the balance being internal processing during the course of the year. In all, 10 shipments of silver-gold concentrate were sent to Noranda's Horne Smelter in 2004.

The Polymet Labs portion of the Polymet facility is fully operational and is currently conducting commercial assaying work primarily for Kirkland Lake Gold Inc.

The company will be pursuing hazardous goods permitting, in order to meet new Ministry of the Environment guidelines, that would permit them to handle precious- and base-metal-bearing slags, refinery sludge, dental waste, certain computer/electronic components and silver chloride by-products.

The plant and operation received its ISO 9001:2000 Quality Management System certification July 2004.

The company is also upgrading its environmental Certificate of Approval for acoustics and air smoke stack emissions, which is expected to be completed in 2005 (G. Chitaroni, personal communication, 2005).

SMC (Canada) Ltd. – McAlpine Mill

SMC (Canada) Ltd., a subsidiary of Sabin Metal Corporation of East Hampton, NY, operates the McAlpine mill in Cobalt, Ontario. The 200 ton per day plant is a gravity-flotation circuit and recovers gold, silver and the PGM group of metals from slag, crucibles and refractory brick from its refineries. The company also engages in custom milling of non-acidic ore. SMC (Canada) Ltd. employs 18 full-time employees (D. Cleroux, SMC (Canada) Ltd, personal communication, 2005).

MINING AND MILLING ACTIVITY – INDUSTRIAL MINERALS

Extender Minerals of Canada Ltd. – Barite

Extender Minerals of Canada Ltd. produced approximately 12 000 t barite in 2004. The mine in North Williams Township provided all ore that was processed at the Powell Township mill. Mining at the North Williams operation is via a decline ramp. The ore at this mine is exceptionally pure, grading 99% $BaSO_4$. Ore reserves at the North Williams Mine exceed four years and there are some reserves remaining at the Yarrow Mine. Some development work was done on the Langmuir Township barite property. The company employs 25 people on a year-round basis and the work force generally increases in summer (R. Hill, Extender Minerals of Canada Ltd., personal communication, 2005).

Kirkland Lake Rocks – Landscaping Stone

Kirkland Lake Rocks has 6 quarries near Kirkland Lake and the stone types include black, red, pink and white granite; green marble; white quartz and rose quartz. The company produces crushed stone for landscaping and architectural precast (*Ontario Mining and Exploration Directory*, 2004).

Miller Minerals, a Division of Miller Group Inc. – Lime and Limestone Production Facility, Haileybury, Ontario

Near normal production levels of over 60 000 t per annum continued in 2004. Once again Enviro Lime deliveries to the Kam Kotia Mine rehabilitation project highlighted the year's activities. Significant new developments in the use of specialty products such as Hydrated Lime, Quicklime, and Metallurgical Limestone Fines contributed to the overall volume. Packaging of these products in bulk bags has increased the customer base. The application of lime and limestone as additives in asphalt products and road base materials has increased and is expected to grow over the next few years.

The company's ability to review a specific customer's requirement and adapt a product to meet the need remains key to the success of Miller Minerals (T. Overton, Miller Minerals, personal communication, 2005).

A. Miron Topsoil – Limestone Aggregate

A. Miron Topsoil produced limestone aggregate at a quarry north of Temiskaming Shores.

ADVANCED EXPLORATION

Apollo Gold Corp.

In 2003, Apollo Gold Corp. reported a proven and probable mineral reserve for the open pit portion of the Black Fox property in Hislop Township of 2 953 000 t grading 4.81 g/t Au or containing 457 100 ounces of gold. In 2004, the company's contractor, Redpath Limited, completed a 152 m extension of the existing underground ramp, from the 235 m level, as well as a 920 m drift. The company completed 204 underground diamond drill holes totaling 39 000 m, as well as 43 000 m in 105 surface drill holes. Some of the better intersections below the limits of the proposed pit include 10.37 g/t Au over 15 m, 60.20 g/t Au over 2.6 m, 1212.45 g/t Au over 1.3 m, 24.69 g/t Au over 8.4 m and 31.10 g/t Au over 5.8 m.

Apollo discovered a base metal zone in the footwall of the Porcupine Destor Fault Zone and some of the holes contain significant gold content. Diamond drill hole 04BF368 intersected 12.8 feet grading 9.896 ounce per ton Ag, 15.65% Pb and 16.53% Zn, and diamond drill hole 04BF390 intersected 17.7 feet grading 0.544 ounce per ton Au from this new zone.

Diamond drilling was suspended to allow updating of project modelling in preparation for a feasibility study, recently awarded to AMEC Americas Limited. The permitting process, which began in 2004, is anticipated to require approximately two years. A combined open pit and underground mine, with on-site milling, at a capacity of approximately 1500 tonnes of ore per day is planned (Apollo Gold Corporation, press releases, February 3 and 26, April 7 and 8, July 13 and 27 and November 11, 15, 16 and 17, 2004, http://www.apollogold.com/).

Contact Diamond Corporation (former Sudbury Contact Mines Limited)

In 2003, Contact Diamond Corporation completed a reverse flood, large diameter drilling (LDD) mini-bulk sampling program on its 95-2 kimberlite pipe in Lundy Township.

SGS Lakefield Research Ltd. processed 61 mini bulk samples (652 dry t). Diamonds were recovered in all the samples and all kimberlite facies. A total of 1449 diamonds weighing 67.354 carats were retrieved. Twelve diamonds, from the east-central portion of the 95-2 pipe, exceeded 3.35 mm, 4 of which exceeded 1 carat, with the largest weighing 1.623 carats. A total of 54 diamonds were recovered on the 2.36 mm sieve for the east-central portion of the pipe and 19 in the western portion. An additional 171 diamonds were recovered on the +1.70 mm sieve, of which 133 were from the east and central portions of the pipe. Recovered diamonds are dominantly white and transparent with minor brown, pink and yellow variants.

De Beers Canada Exploration Inc. processed and recovered diamonds from seven audit samples of the mini-bulk sample from the LDD program. The audit demonstrated that the results obtained by SGS Lakefield during the processing were complete and accurate.

The dominant kimberlite facies through the eastern and central portions of the 95-2 kimberlite pipe returned recovered grades of 16.31 carats per hundred tonnes (cpht) for the upper Weathered Tuffaceous Kimberlitic Breccia (WTKB) facies, and 13.28 cpht for the lower Eastern Tuffaceous Kimberlite Breccia (TKB) unit. The western portion of the pipe, confirmed as a separate intrusion, returned a lower grade tenor, with the Western WTKB facies grading 4.25 cpht, the Western TKB facies 5.49 cpht, and in a newly discovered Hypabyssal Kimberlite facies ("K5"), 3.72 cpht.

Contact Diamond commissioned WWW International Diamond Consultant Ltd. of Antwerp, Belgium to perform valuations and value models of the diamonds. WWW valued 44 lots out of the 61 mini-bulk samples, containing diamonds greater than the +9 diamond sieve (~0.179 carats per stone), representing 81% of the total diamonds in carat weight. These lots contained 52.19 carats and were valued at US$38 per carat. Current best estimate value model is US$66/carat with a low of US$52/carat and a high of US$98/carat. "Of the diamonds valued, there were no crystals, but the proportion of sawable and makeable goods was normal. The quality (colour) of the diamonds was typical of what is seen in other Canadian production, i.e. above average for world production", WWW reported. Individual mini-bulk sample valuations ranged up to a high of US$87/carat in the Eastern Kimberlite and US$64/carat in the Western Kimberlite of the 95-2 pipe (Contact Diamond Corporation, press releases, March 5, May 28 and November 16, 2004, http://www.contactdiamond.com/).

EXPLORATION ACTIVITY

Acrex Ventures Ltd. – Michaud Properties

Acrex Ventures Ltd. continued to explore the Western Zone in Michaud Township. The property is under option from Moneta Porcupine Mines Inc. Six diamond drill holes totalling 2220 m were completed in 2004. The mineralized system extends for 850 m and is open in both directions and down dip. Multiple mineralized zones are encountered in each drill hole with intersections up to 6.08 g/t Au over 2.00 m. The system has only been tested to a vertical depth of 150 m.

On the 55 Zone, Acrex Ventures Ltd. diamond drilled 3 holes totalling 1118 m and extended a previous hole by 90 m. Hole MA-04-25 returned an intersection that assayed 12.76 g/t Au over 4.30 m (Acrex Ventures Ltd., press releases, March 1, April 22 and September 7, 2004, http://www.acrexventures.com/).

Belmont Resources Inc. – Beatty Twp Property

Belmont Resources Inc. completed 5 diamond drill holes totalling 584 m. The holes were specifically spotted to intersect 3 HLEM conductors. Drill holes 1, 2, 4 and 5 intersected widespread silicification and semi-massive sections of pyrrhotite and pyrite with minor chalcopyrite. Hole 5 intersected 1.45 g/t Au over 0.8 m (Belmont Resources Inc., press release, June 01, 2004, http://www.belmont-resources.com/).

Brigadier Gold Limited – Chartré-Dufresne Property

Brigadier Gold Limited completed a 54 line-km magnetic survey, a Time Domain Spectral IP survey, trenching and a 12-hole diamond drilling program on its Chartré-Dufresne gold property in the Matachewan area. Fourteen IP targets were identified, mostly along the Wyley Lake fault structure. The diamond-drilling program tested 7 target horizons. Two of the 7 target horizons returned wide intersections of up to 14 m of 1.7 g/t Au, including values of up to 4.1 g/t Au over a core length of 2.69 m (Brigadier Gold Ltd., press releases, March 5, April 30, September 9, 13, 14 and 22, December 20, 2004, http://www.brigadiergold.com/).

Cabo Mining Enterprises Corp.

Cabo Mining Enterprises Corp. discovered a new calcite-quartz vein system containing massive lenses of galena and chalcopyrite located in the northern part of Gillies Limit North Township. The discovery is located approximately 100 m south of the old Waldman # 1 Shaft. Overburden stripping exposed a 10 m wide network of calcite-filled fracture veins with associated cobalt-base metal mineralization along a 30 m strike length. Three grab samples assayed from 3 to 126 g/t Ag with associated lead from 0.6% to 12.2%. A grab sample from another narrow vein containing visible cobalt "bloom" at surface assayed 12 g/t Ag, 7.1% Co and 3.1% Ni.

At the Cummings Pits prospect on the same property, the best assay from chip sampling contained 339 g/t Ag, 20.7 g/t Au, 11.2 % Pb, 2.8 % Zn and 2.8 % Cu (Cabo Mining Enterprises Corp., press release, December 9, 2004, http://www.cabo.ca/).

Contact Diamond Corporation (Sudbury Contact Mines Limited) – Timiskaming Diamond Project

Sudbury Contact Mines Limited discovered 2 diamondiferous kimberlite pipes, one in Van Nostrand Township (KL-01) and one in Klock Township (KL-22). Nineteen micro-diamonds were recovered from 84.98 kg of kimberlite from the KL-22 pipe. Two macro- and 25 micro-diamonds were recovered from 87.95 kg of kimberlite from the KL-01 pipe. About 7000 m of diamond drilling was scheduled for completion by the end of 2004. As a result of the discoveries, the company acquired an additional 28 500 ha of ground around the pipes. Airborne geophysical surveys were flown over the new ground. In 2004, Sudbury Contact Mines Limited changed their name to Contact Diamond Corporation (Sudbury Contact Mines Limited, press releases, May 28 and July 14, 2004; Contact Diamond Corporation, press release, November 16, 2004; http://www.sudburycontact.com/).

Croesus Gold Inc.

In Munro Township, Croesus Gold Inc. completed a 900 m, 6-hole diamond-drilling program immediately east of the past-producing Croesus Mine. Drill hole CG-04-01 intersected 0.58 g/t Au over 16 m (approximately 10 m true width) (Croesus Gold Inc., press release, May 6, 2004).

Dianor Resources Inc. – Pacaud JV Property

Dianor Resources Inc. optioned the diamond rights on the Pacaud Township property from Globex Mining Enterprises Inc. Studies of drill core from 3 dikes classified them as xenolithic macrocrystic hypabyssal kimberlite. The company completed a ground magnetic survey that outlined 20 linear magnetic anomalies. This resulted in the staking of 23 additional claim units in Pacaud and Chamberlain townships. At least 6 diamond drill holes were completed to recover sufficient kimberlite material for diamond analysis (Dianor Resources Inc., press releases, March 2, June 3 and 21, July 12, 2004, http://www.dianor.com/).

GLR Resources Inc. – Eby Township

GLR Resources Inc. followed up IP and soil and tree (organic) geochemical surveys by diamond drilling 5 holes. Drill hole BW-04-01 returned 1.399 g/t Au over 6.0 m. The hole was drilled on the Cadillac–Larder Lake Fault Zone on the Baldwin property (GLR Resources Inc., press releases, February 5, March 29, April 8 and June 24, 2004, http://www.glrresources.com/).

Goldeye Explorations Limited – Tyrrell Township

Goldeye Explorations Limited completed a winter diamond drilling program to test the extension of the North Lacarte zone southeastward from a surface exposure where a surface assay of 5.79 g/t Au over 16 m was previously reported. Seventeen diamond drill holes totalling 2504 m tested the North Lacarte zone and additional targets along the Tyrrell Shear Zone, resulting in two significant intersections. Drill hole H16-04 intersected 3.01 g/t Au over 6.05 m, extending the zone to the northwest. Drill hole H04-17 intersected 3.79 g/t Au over 6.4 m (Goldeye Explorations Limited, press releases, January 12, February 19 and 27, March 16, 2004, http://www.pathcom.com/~goldeye/).

Goldstake Explorations Inc.

Goldstake Explorations Inc. drilled its gold and diamond property, located one mile north of the Kerr Addison mine in McGarry Township (optioned from Transpacific Resources). Two diamond drill holes totalling 252 m were drilled

to further investigate a previously discovered gold-bearing zone termed Instant Pond. Both holes intersected gold mineralization. Assay results from Hole No. 04-51 ranged from nil to 7.01 g/t Au. Assay results from Hole No. 04-52 ranged from nil to 15.52 g/t Au plus 8.4 g/t Ag and 1.62% Cu. The results of these 2 holes confirm continuity of the Instant Pond mineralized zone, which remains open along strike and down dip (Goldstake Explorations Inc., press release, June 17, 2004, http://www.goldstake.com/).

Harte Gold Corp. – Decker Property

Harte Gold Corp. completed an 8-hole, 1009-m diamond-drilling program on the Decker property in Natal and Knight townships. The property is held by International KRL Resources Corp., with Hemlo North Shore Inc. having an agreement to earn a 50% share. Harte has an agreement with Hemlo North Shore to earn a 40% interest in the property. The drilling was designed to test the Tiger Zone, the LG Zone and mineralized rocks below the LG Zone. Hole AD 23 intersected the LG Zone and returned an assay of 14.43 g/t Au over 2 m. Hole AD 28 returned an assay of 4.19 g/t Au over 1 m in the Tiger Zone (Harte Gold Corp., press releases, February 16 and March 26, 2004).

International KRL Resources Corp. – Shining Tree Properties

International KRL Resources Corp. completed a 4974 m, 53-hole reverse circulation drilling program on the Golden Sylvia Iron Formation property in Macmurchy and Tyrrell townships. The program helped to establish continuity between sections. RCGS-04-23 intersected 3.56 g/t Au over 12.24 m, RCGS-04-44 returned 2.47 g/t Au over 16.28 m, RCGS-04-21 returned values of 2.43 g/t Au over 13.26 m, RCGS-04-13 intersected 1.89 g/t Au over 17.32 m and RCGS-04-14 intersected 1.50 g/t Au over 17.34 m.

A 1081 line-km airborne, high sensitivity magnetometer survey was flown over the Copper Hill property. The survey was followed up by prospecting and mapping (International KRL Resources Corp., press releases, March 3, June 10, July 6 and 19, August 19, September 7 and 23, October 7, November 1 and 15, December 6, 2004, http://www.krl.net/).

Liberty Mineral Exploration Inc. – McAra Lake Property

Liberty Mineral Exploration Inc. completed 15 diamond drill holes on the McAra Lake property in Dufferin Township. The program was successful in delineating a vertical zone of cobalt mineralization over a strike length of 170 m. Copper mineralization is east trending, plunges 15 degrees to the west and is hosted by cherty interflow sedimentary rocks. A mini-bulk sample, weighing 363 kg, was collected over a 12 m long portion of the vein exposure. The sample averaged 10.18% Co, 1.14% Ni and 19.0 g/t Ag (Liberty Mineral Exploration Inc., press releases, January 28, February 25, June 21, October 1 and 22, 2004, http://www.libertymineral.com/).

Mustang Minerals Corp. – Bannockburn Nickel Project

Mustang Minerals Corp. continued to be very active on the Bannockburn nickel project, with up to 3 diamond drills operating at one time. A 3100 line-km deep-penetrating AeroTem airborne electromagnetic and magnetic survey was completed over the Bannockburn and other Timmins area properties. Geological mapping and sampling was completed on 20 high priority targets.

Based on the first 21 diamond drill holes in the C-Zone, the average weighted grade and thickness was determined to be 1.85 m at 2.07% Ni and 0.06% Co. Drill hole MBC-47 (C-Zone) intersected 2.06% Ni and 0.07% Co over 2.93 m. Drilling was completed on the A-Zone, B-Zone, C-Zone Offset and F-Zone. Hole MBF-04 intersected 3.19% Ni and 0.13% Co over 2.55 m in the F-Zone.

In another area, 2 wide intersections of low-grade mineralization were encountered in drill holes 250 m apart. Hole BN-19 intersected 0.52% Ni over 25.25 m and hole MB-09 intersected 0.33% Ni over 202 m. The mineralization is contained within a serpentinized dunite. The zone coincides with a highly magnetic conductive EM target that is 4000 m long and between 200 and 600 m wide. The company is describing the zone as "Mount Keith" style

mineralization (Mustang Minerals Corp., press releases, January 8, 9,14 and 29, February 3 and 19, March 2, April 1, 23 and 26, May 26, June 14, October 5 and 18, 2004, http://www.mustangminerals.com/).

Namex Explorations Inc. – Wilder Property

Namex Explorations Inc. completed a reconnaissance prospecting and due diligence sampling program of the Wilder property in Milner Township. Historical pits and trenches were sampled with the best assay of 113.9 g/t Ag (Namex Explorations Inc., press release, October 20, 2004, http://www.namex-explorations.com/).

NFX Gold Inc. – Larder Lake Properties

NFX Gold Inc. completed a $1 million exploration program on its Larder Lake properties, west of the former Kerr Addison mine. Forestry operations on the property exposed outcrops of fuchsite-bearing carbonate-altered rock. Three grab samples assayed in excess of 10 g/t Au. Thirty-five diamond drill holes, totalling about 5500 m, were completed on the Cheminis, Fernland, Fernland East, Bear Lake and North Carbonate gold zones. On the Fernland property, hole NFX-18-04 returned 2.54 g/t Au over 12 m. Hole NFX-08-04 returned 9.46 g/t Au over 4 m on the Cheminis property and hole NFX-16-04 assayed 0.38 g/t over 77 m on the Bear Lake property (NFX Gold Inc., press releases, August 9, September 14, and November 25, 2004, http://www.nfxgold.com/).

Novawest Resources Inc. – Solano Gold Project

Novawest Resources Inc. completed a trenching and sampling program on the Solano gold project in Argyle and Baden townships. Samples assayed up to 54.23 g/t Au. A 248 m diamond drill hole targeted the surface showing. The hole intersected numerous anomalous intersections, the best being 1.87 g/t Au over 3.0 m (Novawest Resources Inc., press releases, May 27, June 1, 2004, January 26, 2005, http://www.novawest.com/).

Phoenix Matachewan Mines Inc.

Phoenix Matachewan Mines Inc. completed an extensive geophysical and trenching program in the Argyle Township area, approximately 20 km west of Matachewan. A 7 km long band of IP responses was identified and is located within an area where previous prospecting identified anomalous gold mineralization over a 15 km^2 area. The most significant IP responses are at the old Ashley mine. Prospecting, mapping and backhoe trenching was completed in June of this year over the prospective areas identified by the geophysical results. An 18 hole diamond drilling program was completed. The narrow, high grade Garvey vein was intersected in 14 of the holes. The best intersections are 0.4 m grading 29.8 g/t Au and 0.6 m grading 23.97 g/t Au (Phoenix Matachewan Mines Inc., press releases, January 22, July 26, September 15 and December 6, 2004, www.phoenixmatachewan.com).

Queenston Mining Inc. – Kirkland Lake Properties

Geological mapping, stripping and sampling was completed on the Kirkland West property, targeting both east- and north-trending gold structures. 3D modelling was completed on the Amalgamated Kirkland deposit in Teck Township and the Upper Canada and McBean deposits in Gauthier Township.

Queenston Mining Inc. and Kirkland Lake Gold Inc. signed a joint venture agreement to explore the Gracie West property in Teck Township. Kirkland Lake Gold will be the operator and incur the first $100 000 of expenses.

A 5-hole, 4400 m diamond drilling program was started on the Princeton property in Gauthier Township, with at least 3 holes being completed by year end. Drill hole PR-04-11 intersected a new zone that assayed 30.6 g/t Au over 1.0 m at a vertical depth of 795 m. Two holes on the Ritchie Zone returned low values (Queenston Mining Inc., press releases, July 15, September 22, November 24 and December 13, 2004, http://www.queenston.ca/).

Temex Resources Corp. – Juby Property

Temex Resources Corp. continued to diamond drill the Juby Zone in Tyrrell Township. A resource estimate for the Juby Main Zone was released; an indicated mineral resource of 4.46 million t grading 2.20 g/t Au; and an inferred mineral resource of 1.84 million t grading 2.03 g/t Au. In October, Temex Resources Corp. announced a mechanical stripping and sampling program as well as a 10 000 m diamond drilling program to expand on the mineral resource estimates. Fifteen holes and 1 extension were completed. The Juby Main Zone was extended 300 m to the east. Drill hole JU 04-85 intersected 3.62 g/t Au over 2.90 m (Temex Resources Corp., press releases, March 2, June 7 and 21, July 20, October 13, December 15, 2004 and February 16, 2005, http://www.temexcorp.com/).

Temex Resources Corp. – Latchford Project

The Latchford gold project consists of twelve properties totalling 65 000 acres distributed over numerous townships southwest of New Liskeard. Temex Resources Corp. completed reconnaissance mapping, prospecting and IP and a 16-hole diamond-drilling program totalling 2561 m. Drilling did not return significant gold assays but 4 holes intersected a series of carbonate veinlets, which may be related to the gold-bearing discovery boulder found by Temex in 2003. Hole BR-04-01 intersected a gabbro unit that returned 0.72% Ni, 0.19% Cu and 0.357 g/t Pt+Pd over 1.4 m (Temex Resources Corp., press releases, June 7 and 21, August 12, September 16 and 21, November 1, 2004 and January 26, 2005, http://www.temexcorp.com/).

Temex Resources Corp. – Wilson Lake Project

During 2004, Temex Resources Corp. collected 219 till samples from 2 claim groups near the town of Temagami. Samples were processed and indicator mineral picking indicated 3 distinct mineral trains. An alluvial diamond was recovered from a single till sample a short distance down-ice from a cluster of magnetic anomalies (Temex Resources Corp., press release, January 17, 2005, http://www.temexcorp.com/).

Temex Resources Corp. and Goldeye Explorations Limited – Juby North Joint Venture

The joint venture companies completed a Spectral IP survey and a 12-hole, 2115 m diamond drilling program on the Juby North property in Tyrrell Township. A new zone was discovered that returned values of 3.24 g/t Au over 2.24 m and a separate interval of 5.18 g/t Au over 1.72 m. The zone is located 1.1 km northwest of the Juby Main Zone. A hole on the Tyrrell Shear Zone returned 4.77 g/t Au over 4.91 m (Goldeye Explorations Limited, press releases, March 16, April 19, June 9, 2004, http://www.pathcom.com/~goldeye/; Temex Resources Corp., press release, June 7, 2004, http://www.temexcorp.com/).

Tres-Or Resources Ltd. – Temagami Diamond Project

Tres-Or Resources Ltd. recovered an alluvial diamond from one of 37 till samples collected to provide additional information on the property's highest priority targets. A large number of Cr-pyropes, Cr-diopside, forsterite olivine, Mg-ilmenite and chromite grains were also recovered (Tres-Or Resources Ltd., press release, January 31, 2005, http://tres-or.com/).

Tres-Or Resources Ltd. and Adroit Resources Inc. – Temagami Properties

Adroit Resources Inc. optioned a two-third interest in 3 properties (Temagami North, Cobalt South and Temagami East) from Tres-Or Resources Ltd. An airborne magnetic and electromagnetic survey covered 1495 line-km. Seven targets were recommended for immediate follow-up. Tres-Or completed ground geophysical surveys, till sampling and geological mapping over a number of anomalies (Tres-Or Resources Ltd., press release, July 16, 2004, http://www.tres-or.com/; Adroit Resources Inc., press release, November 1, 2004, http://www.adroitresources.ca/).

Vault Minerals Inc. – Lebel Gold Property

Vault Minerals Inc. completed 9 diamond drill holes, totalling 1139 m. Assay values ranged up to 11.6 g/t Au over a core length of 2.8 m. The mining rights of 2 patented mining claims that adjoin the property were purchased (Vault Minerals Inc., press releases, June 3 and October 28, 2004, http://www.vaultminerals.com/).

Vedron Gold Inc. – Ramp Property

Vedron Gold Inc. completed an IP survey and 11 diamond drill holes on the Ramp gold property, optioned from Globex Mining Enterprises Inc., near Matheson. Vedron's best result on the South Zone was drilled between 2 high-grade intercepts, drilled in 1999 (16.0 g/t Au over 1.4 m and 55.0 g/t Au over 0.3 m). Hole VR04-5 intersected a similar pyrite-mineralized zone, which assayed 15.1 g/t Au over 1.0 m. These three intercepts cover a potential 250 m strike length (Vedron Gold Inc., press release, October 25, 2004, http://www.vedron.com/).

Wallbridge Mining Company Limited

Wallbridge Mining Company Limited completed a shallow diamond drilling program of 8 holes totalling 1850 m to test the Verna Lake anomaly over a strike length of 1.6 km. The drill holes targeted IP chargeability anomalies associated with the rock geochemical anomaly. Assay results include wide intervals of anomalous base metal mineralization, such as 55 m at 0.12% Cu in drill hole WC-03, which includes 1.7 m at 0.57% Cu. Numerous anomalous gold values were encountered associated with copper and molybdenum mineralization. The setting of the mineralization is now recognized as porphyry type. The drilling also verified the presence of narrow polymetallic zinc-lead-copper-gold veins, which were the focus of past exploration in the 1980s (Wallbridge Mining Co. Ltd., press release, June 4, 2004, http://www.wallbridgemining.com/).

Young-Davidson Mines, Limited – Matachewan Gold Project

In the Matachewan area, Young-Davidson Mines Limited released a mineral resource estimate for the Matachewan gold project. For an open pit, the resource estimate is 6 330 000 t at 2.13 g/t Au measured; 481 600 t at 2.02 g/t Au indicated; and 329 700 t at 1.34 g/t Au inferred. Underground resources are 7 802 500 t at 4.05 g/t Au inferred. Exploration continued in the spring with the drilling of 20 diamond drill holes totalling 3453 m. Drill hole OK04-39 intersected 4.4 g/t Au over 1.38 m (Young-Davidson Mines, Limited, press release, August 18, 2004; MD&A release May 13, 2004; http://www.youngdavidson.com/).

Zenda Capital Corp. – Teck Township Properties

Zenda Capital Corp. released assay results from a 9 hole, 1055 m diamond drilling program in Teck Township. Two holes were drilled about 1200 m west-northwest of the Federal Kirkland shaft. Hole ZKL-04-01 intersected 15.71 g/t Au over 1.0 m. One hole was completed about 500 m west-northwest of the Federal Kirkland shaft without intersecting significant gold mineralization. The remaining 6 holes were completed within 125 m of the Federal Kirkland shaft, testing the Federal Vein. The best intersection was 5.95 g/t Au over 0.6 m (Zenda Capital Corp., press release, July 20, 2004, http://www.zendagold.com/).

RESIDENT GEOLOGIST STAFF AND ACTIVITIES

At year-end, the staff consisted of G. Meyer, Regional Resident Geologist, G. Grabowski, District Geologist, D. Guindon, District Geologist and E. Chaloux, District Support Geologist. A. Todd, summer experience student, provided client service support and assistance to all staff.

G. Meyer gave an overview on mining and exploration activities in the northeast at the Northern Prospectors Association (NPA) annual meeting and was actively involved in planning the Swastika Drill Core Library move to the Swastika remote drill core storage site.

G. Grabowski operated a field office in Cobalt for 4 days per month during the field season from May to October, gave an overview on mining and exploration activities in the northeast at the Northeast Mines and Minerals Symposium in Sudbury in April, and collected samples as part of a Discover Abitibi Initiative project aimed at determining the diamond potential of lamprophyre dikes.

D. Guindon participated on a committee studying enhancements to the MDI database application, was involved on a committee exploring avenues for future electronic assessment work submissions, and continued to update a digital field trip guide for the Kirkland Lake area.

E. Chaloux attended several mineral exploration related courses and worked on a mapping project in Clifford Township as part of his MSc requirements at Laurentian University.

Kirkland Lake Resident Geologist office (RGO) staff contributed material for the Northeast Ontario's Regional Resident Geologist program display for the Prospectors and Developers Annual Convention (PDAC) in Toronto, the Northeast Ontario Mines and Minerals Symposium in Sudbury and the Ontario Prospectors Association (OPA) Symposium in Toronto.

Kirkland Lake RGO staff conducted 5 field trips in the Kirkland Lake area. Information sessions were provided for the Northern Prospectors Association, École Secondaire Jean-Vanier, King George Public School and Joseph H. Kennedy Public School students.

Exploration activities in the Kirkland Lake Regional Resident Geologist District were up for the third consecutive year. Please refer to Table 8 for a summary of the year 2004 activities.

PROPERTY EXAMINATIONS

GLR Resources Inc. South Lake Zone – a Prospect Requiring Further Exploration

GLR Resources Inc.'s (former Lenora Explorations Ltd. and Greater Lenora Resources Corporation) South Lake Zone is located 1.2 km northeast of Larder Lake on Claim L410317 in McVittie Township. The South Lake Zone is an auriferous, silicified (and/or albitized) zone with disseminated pyrite and minor narrow quartz veins. The silicified and/or albitized zone, referred to as "ore zone" in drill logs, contains low gold values throughout. The "ore zone" occurs within a more extensive brown and green carbonate alteration envelope and the altered rocks hosting the mineralized zone are logged as sandstone and conglomerate. The green carbonate is the hydrothermally altered equivalent of ultramafic conglomerate.

The South Lake Zone is located approximately 1 km south of the Cadillac–Larder Lake Deformation Zone. Overburden stripping and more than 20 diamond drill holes have exposed and tested the zone over a strike length of approximately 180 feet. The zone is badly cross-faulted (Lovell 1983b) and this may explain the warped/folded configuration and pinching and swelling of the zone over short distances, apparently ranging in true thickness up to 30 feet. The general trend of the South Lake Zone is 050°. If isolated hole 83-26 (DCL - KL0529) with low gold values drilled further to the north is included, then the Lake zone has a potential strike length of approximately 450 feet. The main mineralized zone on the southern-most section appears to dip steeply to the northwest and on three sections to the north the dip is to the southeast. On the latter three sections the western contact of the mineralized zone is steep and the eastern contact appears to range from 40° to 80°. On the three sections, the mineralized zone widens with depth and the grade increases. With the high degree of variances in width, strike direction and dip, it is conceivable that several of the deeper holes did not reach the mineralized zone. To the southwest the mineralized zone appears to terminate abruptly. Hole 83-20 (KL0523) intersected 59.4 feet grading 0.0448 ounce per ton gold and diamond drill hole 83-22 (KL0525) located 22 feet to the southwest and on section, intersected only 4 feet

grading 0.002 ounce gold per ton. A fault may explain the sudden discontinuity of the zone. Drilling has tested the gold mineralized zone to a shallow depth. The deepest intersection is approximately 120 feet vertically below surface.

The best intersections in diamond drill holes completed in 1982 and 1983 are as follows: diamond drill hole 82-5 (KL0508) 71 feet grading 0.0417 ounce per ton gold (including 35 feet at 0.061 ounce per ton gold), hole 82-2 (KL0505) 5 feet at 0.15 ounce per ton gold, hole 82-3 (KL0506) 4.1 feet at 0.28 ounce per ton gold and 25 feet grading 0.04 ounce per ton gold, hole 82-11 (KL0514) 10.7 feet at 0.97 ounce per ton gold, hole 83-18 (KL0521) 6 feet at 0.15 ounce per ton gold and hole 83-20 (KL0523) 9 feet at 0.187 ounce per ton gold.

Most of the drill core from these holes is stored at the Kirkland Lake Remote Drill Core Storage Site (RDCSS). The drill core of these holes has been exposed to the elements and the iron carbonates have oxidized, enhancing the prominence of the iron carbonate alteration zones.

The auriferous silicified and/or albitized zone with disseminated pyrite and minor quartz veins, set in a larger brown and green carbonate alteration envelope is a very attractive zone for further exploration. The reason for the sudden cut-off to the southwest needs to be investigated. Walking magnetometer and Mobile Metal Ion (MMI) surveys should be performed to possibly extend the zone to the northeast and determine if 2 zones, anomalous in gold, intersected in diamond drill hole 83-26 (KL0529), can be linked to the main exposed mineralized zone. The strong alteration zone with an auriferous core zone is characteristic of the known gold deposits in the area. The zone has only been tested near surface and could be the site where the deposit "tops out". It stands out as a deposit that needs testing at depth by diamond drilling.

Golden Sylvia Iron Formation

International KRL Resources Corp. discovered gold in iron formation on their Copper Hill property during the summer of 2000. The prospect is located in southeast Macmurchy Township, with the discovery outcrop located at approximately NAD83 Zone 17 494115E / 5273025N (MDI41P11SE00076). The iron formation was known to exist prior to 1923 but it does not appear to have been explored for its gold potential prior to 2000. Gold deposits in iron formations are common in Precambrian rocks. Ontario examples include Geraldton and Pickle Lake (Boyle 1979).

The Golden Sylvia Iron Formation property occurs in the Shining Tree greenstone belt of the southern Abitibi Subprovince. Recent government mapping includes Johns (2003). The area has been divided into the Pacaud, Deloro, Kidd-Munro, Tisdale and Timiskaming assemblages based on zircon geochronology and range in age from 2741 Ma to 2687 Ma (Ayer et al. 2002; Caldbick 2004). The iron formation lies near the contact of the Deloro assemblage overlain by pillowed basalts of the Kidd-Munro assemblage. The iron formation is between 75 m and 100 m thick, striking at 130° and dipping between -45° and -70° to the southwest.

The iron formation is extensively brecciated with a strong overprinting of silicification. International KRL Resources Corp. recognize 8 phases of iron formation based on mineralogy. Minerals include pyrite, magnetite, chert, ankerite, jasper, chlorite and graphite. Locally, the iron formation is underlain by pillowed basalt and is overlain by leucoxene-phyric basalt. Better gold grades are associated with ankerite-rich chert, silica-rich chert and, to a lesser degree, pyritic chert (Caldbick 2004).

Initial drilling on the property was conventional diamond drilling. Due to the extreme hardness of the zone, the 2004 drill program of 53 holes, totalling 4974 m, was completed using reverse circulation drilling. Drill holes in this program were drilled vertically to a depth of about 100 m. Gold assay results correlated well with the previous diamond drilling program results. The program validated the mineralization to a strike extent of 300 m with the system open along strike in both directions and down dip. Work to date suggests that there are 2 higher-grade zones. International KRL Resources Corp. report the drill intercepts from the reverse-circulation drill program on its website. The average length of the intercept is 13.1 m with a weighted average assay of 1.24 g/t Au (http://www.krl.net/IF_RC_Drillresults.htm).

The gold tenor of the known zone is relatively low. In the Geraldton area, gold is spatially related to folded ironstone. The gold appears to be structurally controlled (Mason and McConnell 1983).Exploration along strike may locate promising zones of increased folding and deformation.

Relationship of Intermediate and Mafic Intrusions to Mineralized Host Rock at Canagau Base Metal Property, Ben Nevis Township

Hydrothermally altered rhyodacite at the Canagau Mine (Grunsky 1986) in Ben Nevis Township is intruded by a network of dikes and sills of andesitic and basaltic composition (Gibson, 2003). Dacitic intrusive rocks are more common on the adjacent Erhart property to the south. The intrusive rocks constitute a substantial proportion of the rocks in the area, and their extent of hydrothermal alteration would significantly affect further exploration strategies in the area.

G. Meyer carried out reconnaissance sampling on the Canagau property in 2004. An andesitic dike was sampled at 2 sites and the hosting, hydrothermally altered rhyodacite was sampled adjacent to the intrusion (location NAD83, Zone 17 599366E / 5352188N). The andesitic dike was sampled 6 feet east of its contact with rhyodacite and at its chilled margin. The rhyodacite host rock at this site is a lapilli tuff. Major oxide analyses indicate that the rocks sampled are all strongly soda depleted and magnesium enriched (Table 10). This suggests that the dike/sill swarm and the hosting rhyodacitic lapilli tuff was in place prior to the hydrothermal event. These intrusive rocks were likely feeders to andesite flows at a higher stratigraphical level. If so, then massive sulphides formed at the stratigraphic top of the hydrothermal alteration zone may have precipitated on andesite flow rather than the rhyodacite volcanic unit sampled. Where the dike swarm terminates to the southwest, the stratigraphic top of the formations in the immediate mine area, is the lowest stratigraphic horizon "favourable" to volcanogenic massive sulphide (VMS) deposits. With the hydrothermal event postdating the intrusions, it follows that the dike/sill swarm could not have intruded a massive sulphide zone possibly formed at the stratigraphic top of the alteration zone.

VMS deposits form at the ocean floor/water interface where the crust splits apart along fault/fissure zones. In VMS camps it is often difficult to recognize these fault/fissure zones, which acted as conduits to hydrothermal fluids. Hydrothermal alteration is not restricted to the confines of the faulting and the alteration zones commonly are conical/cylindrical shaped below massive sulphide deposits. The shape of the alteration zones masks the presence of the original controlling structures. In the Canagau Mine area, the hydrothermal alteration zone, which has a general oval shape, does not reveal a controlling fault system, however it occurs together with a localized swarm of dikes and sills. The dikes/sills were likely emplaced along a fault/fissure system, which may also have provided a conduit for hydrothermal fluids. The preferred direction for the intrusions appears to be to the southwest. By determining the general strike and dip of the intrusive rocks, one may in fact determine the strike and dip of the now-tilted fault/fissure system along which hydrothermal fluids migrated and subsequent alteration occurred. In projecting the strike and dip of the intrusive rocks onto a yet to be identified "favourable horizon", one should be able to identify the stratigraphic top of the fault/fissure system where massive sulphides could have formed. The down-plunge direction where the intrusions or interpreted faulting form a "T" junction with the plane of the "favourable horizon" should be explored for a potential massive sulphide deposit associated with the Canagau hydrothermal alteration zone or a separate deposit that may have developed along the same fault/fissure zone.

The volcanic rocks in Ben Nevis Township were subjected to folding (Jensen 1975). The axial plane of a syncline, striking to the southeast, occurs about 1.5 km to the southwest of the Cangau Mine site. Deformation associated with the folding likely deformed the original configuration of the hydrothermal alteration zone. Originally, the alteration zone probably had a cylindrical/conical configuration perpendicular to stratigraphy. A more or less horizontal fold axis is indicated by the parallel relationship of it with stratigraphy. In general, movement along slippage planes is up or down in fold limbs perpendicular to the fold axis. In the case of a syncline the core part moves up relative to more distal stratigraphy. In the Canagau Mine area, which is on the eastern limb of the syncline, the hydrothermal alteration zone was probably deformed, assuming a plunge to the northeast.

If the rocks stratigraphically below the assumed "favourable" horizon southwest of the Canagau mine area were permeable up to that favourable horizon prior to the hydrothermal event, then two scenarios should be considered:

1. Hydrothermal alteration right up to the "favourable" horizon suggests a good chance for a massive sulphide deposit to occur below the present erosion surface.

2. A gap in hydrothermal-altered rocks between the "favourable" horizon and the alteration zone would suggest a likely associated VMS deposit above the present erosion surface.

The sampling done to date is preliminary and additional sampling at a number of sites is recommended to verify the theory and also to confirm that the mafic rock sampled was indeed an intrusion and not andesite flow rock.

RECOMMENDATIONS FOR EXPLORATION

Carbonate Alteration Zones in Drill Core Stored at Kirkland Lake Remote Drill Core Storage Site

Carbonatized hydrothermal alteration zones are commonly associated with gold deposits. The iron-rich carbonate minerals ankerite and/or siderite are particularly significant. In fresh drill core, these minerals are not easily distinguished from felsic silicate minerals and more calcic carbonate, and their presence can easily be overlooked. The surfaces of ferrous carbonate minerals, exposed to the elements for several years, oxidize to a brown colour. The contrast is evident in drill core stored outside at the Kirkland Lake Remote Drill Core Storage Site (RDCSS). Numerous conspicuous carbonate alteration zones have been documented and this reconnaissance investigation is intended to aid industry in selecting sites for further evaluations.

The drill core at the RDCSS at present is stored on steel and wooden pallets. In both cases core boxes are stacked on top of one another and individual boxes are not directly accessible. Sufficient drill core was exposed along the sides and at the ends of core boxes to identify the carbonate alteration zones. In rare cases, core boxes with cut drill core were packed too tightly on top of one another to expose any of the drill core. Other hydrothermal alteration minerals considered significant for gold deposits, such as green carbonate, silica (silicification), albite (albitization) and hematite (hematization), were also documented.

Table 11 was created to record the alteration zones identified, and the drill holes with hydrothermally altered core have been sorted by township. The reader should not apply any significance to the number of holes per township with carbonate alteration. This is partially a function of the amount of drilling made available to the Drill Core Library program.

Several drill holes with iron carbonate, green carbonate and silicification and/or albitization were selected for further investigation. Core from GLR Resources Inc.'s South Lake Zone in McVittie Township, a few kilometres east of Larder Lake, is described separately in this report under "GLR Resources Inc.'s South Lake Zone – a Prospect Requiring Further Exploration". Numerous other drill holes are equally worthy of further investigation and should be evaluated.

Exploration for Diamonds - Revisited

As early as 1900, the idea of finding a diamond mine in Ontario has been a subject of Ontario government reports (Blue 1900). Every Kirkland Lake District Report of Activities published since 2000 has included a recommendation for exploration that included diamonds. New airborne geophysical surveys identifying new magnetic anomaly target areas were discussed and recommended in 2000 and 2003. The Discover Abitibi Initiative Round Lake Batholith airborne magnetometer survey released in 2004 (Table 6) has helped identify additional new targets. The similarity between the diamond-bearing lamprophyre in Wawa with those in the Kirkland Lake–Cobalt area was referenced in 2000 and 2002. Subsequently, diamonds were found in lamprophyre and heterolithic breccia in Lorrain Township, south of Cobalt. In 2001 it was suggested that work done to date was insufficient to adequately test the potential of the known pipes. In fact, only 3 of the more than 30 kimberlites identified in the district had greater than one tonne of material tested.

In his reports on the kimberlites of the Lake Timiskaming Structural Zone, R.P. Sage (Sage 1996, 2000) pointed out:

- "The location of additional kimberlites along the Lake Timiskaming Structural Zone trend is excellent."
- "The kimberlites display wide variations in mineral compositions and relative kimberlite indicator mineral abundances."
- "The diamond potential of a kimberlite can not be determined until all the phases are properly tested."
- "The recognition that magnetic lows may reflect the presence of kimberlite pipes as well as magnetic highs has doubled the number of potential targets in the region. The Kirkland Lake area has not yet been prospected for kimberlites displaying magnetic low signatures."
- "It is anticipated that only a small fraction of the kimberlite pipes that actually exist have been found. Most of the known kimberlite pipes have not been adequately tested for diamond content, considering these are complex multi-phase intrusions in which diamond content could vary drastically."
- "In addition to finding more pipes in the known areas of emplacement, the region between Kirkland Lake and Cobalt-New Liskeard would appear to be a very promising area to explore."
- "Another large area worthy of much greater exploration effort is the region between Cobalt-New Liskeard and North Bay. The general area stretching northwest from Kirkland Lake to the known kimberlite intrusions near Attawapiskat could conceivably host unknown clusters of kimberlite pipes."

Recently, Contact Diamonds (formerly Sudbury Contact Mines Ltd.) found 2 kimberlite pipes in Klock and Van Nostrand townships. These are the first kimberlite pipes found west of the Montreal River Fault. They are located about 20 km southwest of the 95-2 kimberlite pipe, from which Contact Diamonds processed a 652 tonne mini-bulk sample that recovered diamonds totalling 67 carats (see "Advanced Exploration" section, this report). As well, Temex Resources Corp. and Tres-Or Resources Ltd. each recently reported the recovery of a diamond from till samples collected near Temagami.

The release of the Discover Abitibi Initiative's Round Lake Batholith Area Magnetometer Survey and recent modern alluvium sampling results published by the Sedimentary Geoscience section (Allan 2001; Reid 2002, 2004) provide a significant amount of data that has not yet been analysed in detail. New innovations in geochemical techniques, including Mobile Metal Ion (MMI), Soil Gas Hydrocarbon (SGH) and selective leach signatures, provide additional tools to pinpoint new areas to explore within the Lake Timiskaming Structural Zone. As Ontario moves closer to commissioning its first diamond mine (De Beer's Victor pipe in Attawapiskat, or perhaps even Contact Diamond's 95-2 pipe), there remain many more targets to be tested in the Kirkland Lake Resident Geologist District.

Milligan Auriferous Quartz Boulders - Comments and Recommendations

This recommendation is intended to augment previous observations and recommendations in "Potential New Gold Camp in Lake Abitibi Area" reported previously (Meyer et al. 2001, 2002). The boulder field containing auriferous quartz boulders in Milligan Township, 0.5 km southeast of East Ford Lake, was revisited at the invitation of L.A. Tihor and R.J. Orchard.

Several authors have previously described the gold-bearing quartz boulders. Good average assay results were obtained from sampling of the boulders, including: 11 samples averaged 0.328 ounce per ton gold (Ferguson and Freeman 1978); 5 boulders sampled (one sample each) averaged 0.188 ounce per ton gold (Meyer et al. 1992); and 4 samples averaged 0.278 ounce per ton gold (Meyer et al. 2001). MNDM staff performed additional sampling of some of the auriferous quartz boulders in 2004. The northern-most quartz boulder (Ferguson and Freeman 1978), which was not located in 2001, was found and sampled in 2004. Gold was not detected in the two samples from this boulder, located at NAD83, Zone 17, 563200E / 5394056N. L. Tihor discovered another boulder measuring

approximately 45 x 20 x 20 cm located at NAD83, Zone 17, 563363E / 5393766N. A sample from this boulder assayed 3.01 ounces per ton gold. Other boulders that have characteristics of alteration zones typically associated with gold deposits have also been documented. These include: green carbonate with quartz veins; strongly sericitized and carbonatized boulders; as well as a large boulder with a tight stockwork of quartz veins in carbonatized host rock with occasional pyrite specks. Two samples of the quartz stockwork material were assayed. One sample assayed no gold and the other 0.03 ounce per ton gold.

Six auriferous quartz boulders have so far been discovered, dispersed over a small area. They vary considerably in size and the largest one, based on a photo prior to it being blasted, is estimated to measure approximately 1.5 x 1.5 x 1.0 m.

The gold-bearing quartz boulders are all well rounded, suggesting they have traveled independently over a considerable distance. For differently sized boulders to end up at the same general site could only have been achieved by individual boulders moving along in tandem, possibly at the base of a glacier. If water was involved as the transporting agent then the smaller boulders should have traveled further downstream (under ice) than the larger ones. An ice sheet floating on water would have dispersed boulders in a more erratic manner, minimizing the likelihood of multiple boulders from the same source occurring together.

Since the general Lake Abitibi area was subjected to several glacial events, the question arises whether one or more ice ages and advances were involved in the dispersion of the boulders. A single large quartz boulder could initially have been moved during an older ice age and disintegrated into smaller pieces during the last glacial event. The quartz material is too brittle to have survived as a single large boulder without breaking into smaller pieces. It is perhaps more likely that the quartz boulders were dislodged from the same bedrock source during the last ice age at the same time or else as a large boulder that broke up into smaller pieces soon after removal from its source.

Vertical sonic drill hole 85-12 (OGS 1986) located at NAD27 Zone 17 563300E / 5394250N (MDI42A09NE00018) was drilled adjacent to the eastern-most large quartz boulder directly east of the access road to East Ford Lake (this boulder has been removed by someone). The hole intersected 61.6 m of sand with some gritty sections and occasional pebbles. The sand of the Munro Esker at this site was essentially deposited by water in an ice-flanked "river". The absence of boulders within the sand and gritty sand layers suggests relative slow flow of water. The dilemma is how a veneer of large boulders became draped over the top of the sand. Two explanations are considered:

1. An iceberg(s), dislodged from the ice sheet floating down the "river" becomes hung up and drops contained boulders upon melting at the present site of the boulders.

2. An ice advance over the frozen esker depositing erratics upon melting back.

If the latter is the case, what was the ice direction? The Munro Esker in this area trends due north to Lake Abitibi where it cuts out near Lake Abitibi's outlet into the Abitibi River. U. Vagners on a field trip (Lovell 1983a) suggested a possible Cochrane re-advance of the last ice age over-rode it almost to Eastford Lake. Based on the direction of the Munro Esker south of Lake Abitibi one would assume an ice-flow direction to the south, however, there is ample evidence suggesting an advance at about 130°:

1. The crest of a hump at the Milligan boulder field has a 130° bearing (pointed out by L.A. Tihor in 2004).

2. One of several preferred directions of long axes in two dimensions of till pebbles just to the north of the Milligan boulders coincides with the above direction (Ferguson and Freeman 1978).

3. Direction of glacial movement at the Milligan auriferous quartz boulder field, determined by fluting, is from the northwest (Ferguson and Freeman 1978).

4. The apparent continuation of the Munro Esker northwest from Lake Abitibi (Lee 1979).

5. A small, discontinuous esker approximately 6 km west-northwest of East Ford Lake has a bearing of about 143° (Lee 1979).

6. The ice flow direction between La Sarre and Joutel in Quebec is at about 130° (Veillette 1989).

The boulders are banded parallel to the larger dimensions, suggesting crack and seal style formation of the quartz vein, from which they were derived. Some of the material caught up along these planes is strongly sericitized and carbonatized rock. This material was most likely scaled off the wall rock as the vein developed. Unfortunately, the "host rock" material has been altered beyond recognition. The only deduction one can draw is that the host rock was not ultramafic in composition; otherwise green carbonate would have formed.

Boulder Mining Corporation in 2002 and Boulder Mining Corporation/Cangold Ltd. in 2004 tested the assumed up-ice direction of about 340°. Overburden Drilling Management Limited was commissioned to perform 2 reverse-circulation drilling projects. The first project consisted of a string of 16 holes from 1 km north of Trail Lake in Moody Township to the east over a distance of 8 km targeting the contact between the Scapa turbidites and Stoughton–Roquemaure komatiites. The drilling verified the northerly location of the contact, but found it to be unsheared, unaltered and unmineralized, suggesting a normal contact and that the Lake Abitibi Deformation Zone (LADZ) does not separate the two formations (Averill and Holmes 2002). The second reverse circulation-drilling program targeted an area 2 to 4 km south of the first project and several sub-parallel rows of reverse circulation holes totalling 24 holes were completed. In this project, significant deformation to support the existence of major east-trending shearing compatible with the proposed LADZ was also not found and gold values did not exceed background values. Reverse circulation hole WALP-04-20 intersected a promising-looking bleached, carbonatized, sericitized (including fuchsite), silicified, tourmalinized and pyritized alteration zone containing brecciated quartz-carbonate veins but contained background gold. It was concluded by Overburden Drilling that the LADZ does not extend westward from Lake Abitibi and that the West Lake Abitibi Property is infertile for both Au and Ni (Averill, Hozjan and Holmes 2004).

Hydrothermally altered rocks intersected in Goldbelt Mines Inc.'s DDH MD-91-03 or DDH KL 2293 (near middle of Moody Township) and Utah Mines Ltd.'s DDHs JL-85-B1 or KL 1844 and JL-84-B4 or KL1852 (near middle and just west of Trail Lake in Moody Township) occur along a weak magnetic low (OGS 2004b). Although these two sites align with Reverse Circulation Hole WLAP-04-20 (Averill, Hozjan and Holmes 2004) there is no magnetic evidence to suggest the three sites are on the same structure.

With a possible complex interplay of ice movements during the last ice age, first in the 160° direction and then possibly followed by the Cochrane advance at 130°, the following is recommended as a follow-up of the Milligan auriferous quartz boulders:

1. MMI surveys should be performed up-ice from the Milligan boulder field at approximately 340° and approximately 310°. These surveys should also be performed in the Trail Lake area, where diamond drill holes have intersected promising carbonate alteration zones as well as a follow-up to the strike extension of Boulder Mining's reverse circulation hole, WALP-04-20. MMI surveys can be an effective exploration tool in this outcrop-poor environment as was demonstrated by Queenston Mining Inc. The company detected coincident weak MMI gold anomalies with previously determined magnetic low features in the vicinity of fault and shear zones (Queenston Mining Inc., Annual Report, 2003; W. Benham, personal communication, 2005).

2. The esker, which trends to the northwest from Lake Abitibi to and beyond Trail Lake, should be explored using Lee's (1965) method (Lee performed a sampling program of bell-shaped ridges of the Munro esker from Catharine Township southeast of Kirkland Lake to Lake Abitibi).

3. North of Trail Lake, several sericitized metasediments and/or tuffs suggest possible hydrothermal alteration, e.g., Utah Mines Ltd. DDH JL-85-NWC (KL1855), which should also be followed up with MMI surveys.

North-trending Auriferous and Non-Auriferous Quartz Veins and Structures in the Kirkland Lake Area

North-trending quartz veins, now referred to as the Upper D Zone and Lower D Zone, as well as a gold-bearing, hydrothermally altered north-trending structure, were discovered by Kirkland Lake Gold Inc. on its Kirkland Lake property. The veins and structure are oriented approximately perpendicular to the east-west-trending, gold-bearing Kirkland Lake Main Break and subsidiary, sub-parallel structures. North-trending gold-bearing zones were previously unknown to occur in the Kirkland Lake gold camp and the discovery adds a new dimension to gold potential in the area.

The Upper D Zone, which is in the early stages of exploration, contains 162 212 tons grading 0.8 ounce gold per ton, equivalent to 129 370 ounces of gold. The lower D Zone occurs about 2000 feet below and down-plunge from the Upper D Zone. Diamond drilling is in progress from multiple levels to determine if the two zones are connected.

Recently, a north-trending auriferous structure was discovered approximately 0.6 km southeast of the Macassa No.2 shaft, 1400 feet south of the South Break and 2000 feet south of the Main Break. The mineralized zone is composed of greywacke and conglomerate with about 15% finely disseminated pyrite and visible gold. Diamond drill hole SV-04-08, which tested the zone near surface, intersected 29 feet of core grading 0.5 ounce per ton gold.

A gold-bearing quartz-tourmaline vein with a similar crosscutting relationship to the general gold trend was discovered at Battle Mountain Gold's, now Newmont Mining Corporation's, Holloway Mine. The vein, which occurs on the 505 West level, was intersected in 14 underground holes. The average of the drill intercepts was 5.8 feet grading 0.415 ounce per ton gold (*The Northern Daily News*, August 1, 2000, p.3).

The north-trending fissures in which auriferous quartz veins precipitated, and shear/fracture zones along which metasomatic replacements including gold occurred, most likely existed prior to and/or developed contemporaneously as gold was introduced along the Kirkland Lake Main Break fault system. These sites could have developed as follows:

1. Step-over faulting from one fault plane to another

2. Differential movement of blocks of rock between two parallel fault planes

3. Or a combination of the two

It is yet to be determined if the new gold zones terminate against the Kirkland Lake Main Break and associated fault splays or if they extend across them. A number of unmineralized north-trending faults cut across the Kirkland Lake Main Break and associated gold mineralization. These are younger in age than the gold mineralizing event and merely caused displacements.

The above considerations bring up the question: what if a north-trending, gold-rich quartz vein occurs in isolation proximal to major east-trending structures, thus far barren of gold. For example, at the Croesus mine in Munro Township, 14 859 ounces of gold were recovered from 5333 tons of a north-trending quartz vein. Apparently the vein was cut off by faulting. The Pipestone fault, with several parallel fault splays, occurs approximately 1.2 km to the northeast and strikes east-southeast. In this area no significant gold mineralization has been discovered. Based on the above reasoning, should the southeast-trending Pipestone fault be further explored in this area?

Gold in Archean metasomatic replacement environments appear to have precipitated within limited temperature/pressure ranges as is evident at the Holloway mine, where the ore body tops out ~200 m from surface. Less intense alteration continues in the same plane towards surface without appreciable gold content. In transposing this concept to quartz veins, it could suggest that certain strategically located, virtually non-gold-bearing veins at surface could become economical at depth? Traditionally, quartz veins lacking ore-grade material at surface are not explored at depth. If this possibility could be proven, then samples of quartz vein material should be tested for relevant trace

elements at various depths. This could then provide a geochemical tool for exploring some quartz veins in other locations.

The Township of Teck geology map (Thomson 1945) shows 3 north-trending quartz veins up to 1 km south of the Kirkland Lake Main Break. Considering the intense prospecting the township was subjected to in the past, it can perhaps be assumed that they are sub-economic at surface. Bearing the above considerations in mind, one is curious to know if they become economical at depth. Queenston Mining Inc. is currently exploring the western-most quartz vein on its property in Teck Township (C. Page, personal communication, 2004).

SPECIAL PROJECTS

Croxall Breccia Pipe Project

Wallbridge Mining Company Limited's Ben Nevis property, consisting of 590 claim units (9439 ha), covers most of Ben Nevis Township and the eastern part of Clifford Township. The property encompasses the Croxall prospect (Brett-Tretheway prospect, Herrick prospect), a breccia pipe that was mapped in detail (1:50) in the summer of 2004 by E. Chaloux, as part of MSc requirements.

The Croxall prospect, located at UTM NAD83, Zone 17, 591855E / 5349990N (MDI32D05SW00035) in southeastern Clifford Township is a well exposed quartz-sericite-altered dacitic breccia approximately 32 m in diameter, in sharp contact with the host amygdaloidal plagioclase-porphyritic dacite flow. The central portion of the breccia pipe is comprised of predominantly clast-supported, angular to sub-angular, lapilli- to block-sized fragments (up to 100 cm in diameter) with a vuggy quartz groundmass. The peripheral portion of the pipe consists of clast- to matrix-supported, rounded to sub-rounded fragments up to 12 cm in diameter with a groundmass comprised of milled dacite fragments and quartz. Mineralization (up to 5%) consists of mostly pyrite +/- chalcopyrite and minor molybdenite and is primarily restricted to the outer "milled" portion of the breccia pipe. However, 1-2% disseminated pyrite does occur throughout and proximal to the breccia pipe in the surrounding host dacite.

Historically, the Croxall prospect yielded anomalous gold, silver, copper and molybdenum assays. Hollinger Consolidated Gold Mines Ltd. performed the first exploration work on file at the Kirkland Lake Resident Geologist office. In 1964, the company diamond drilled a number of holes around the prospect and reported several anomalous gold intersections, including 2.67 ounce per ton over 5.0 feet in hole HO-4 and 0.46 ounce per ton over 5.0 feet in hole HO-24 (Kirkland Lake assessment file KL-1131).

In 1988, Mineta Resources Limited completed 8 diamond drill holes totalling 873 m. Mineta reported gold values up to 3.55 ounce per ton over 4.0 feet in hole M-6 as well as a 20.0 foot intersection averaging 0.041 ounce per ton gold in hole M-8. Mineta noted that gold mineralization appears to be concentrated near the upper and lower contacts of the breccia body. Several elevated copper and silver values were intersected as well, including an intersection of 6700 ppm Cu, 0.77 ounce per ton Ag and 70 ppb Au over 5.0 feet (Kirkland Lake assessment file KL-2139).

Surface grab samples collected from the pipe area by Wallbridge Mining Company Limited in 2003 returned anomalous gold and copper values, including 0.853 g/t Au in sample WAL7304 and >1% Cu in sample WAL7302 (Watkins and Melling 2004). In 2004, Wallbridge cored 9 drill holes on the Ben Nevis property, including 2 holes in proximity to the breccia pipe. Information gathered from these drill holes is expected to help constrain the setting and styles of mineralization in the vicinity of the pipe.

The purpose of the Croxall breccia pipe project is to combine detailed geological mapping, petrography and geochemical data in an effort to characterise the style and spatial extent of mineralization, including hydrothermal alteration of the pipe. Furthermore, a comparison of geological characteristics with other felsic to intermediate volcanic domes, related to base metal or porphyry style mineralization in the Abitibi Subprovince, could have significant implications for the exploration potential of the prospect (E. Chaloux, personal observations, 2004; http://www.wallbridgemining.com/)

Discover Abitibi Initiative – Lamprophyre Sampling Project

The Discover Abitibi Initiative is funded by the private sector and the federal and provincial governments (Industry Canada through FedNor and the Ontario Ministry of Northern Development and Mines (MNDM) through the Northern Ontario Heritage Fund, respectively). The initiative is designed to stimulate mineral exploration in the Ontario portion of the Abitibi greenstone belt. A project to sample lamprophyre dikes in the Kirkland Lake–Cobalt area to evaluate their diamond-bearing potential was approved by the Discover Abitibi program. G. Grabowski, District Geologist with the Ontario Geological Survey Resident Geologist Program in Kirkland Lake, developed and carried out the project.

In 1996, diamonds were reported in lamprophyric dikes and associated breccias in the Wawa area (Sage 1999). Since that time, more than $30 million has been spent exploring for diamonds in rocks in the Wawa area. Since 2000, more than 60 lamprophyre dikes in the Kirkland Lake–Cobalt area have been sampled by Kirkland Lake MNDM staff and more than 200 whole rock and trace element analyses were done on these samples. Preliminary observations from these analytical results indicate that lamprophyre dikes in the Kirkland Lake–Cobalt area are chemically similar to those in the Wawa area and warrant further investigation for their diamond potential (Meyer et al. 2000, 2002). Subsequently, diamonds were found in both a lamprophyre dike and a heterolithic breccia in Lorrain Township, south of Cobalt.

During the fall of 2004, a total of 45 lamprophyre dikes in the Timmins–Kirkland Lake–Cobalt area were sampled as part of a project under the Discover Abitibi Initiative. Samples were shipped to SGS Lakefield Research Ltd. in Lakefield, Ontario, for analysis. The samples (24 kg each) will be tested for diamond content using caustic dissolution. Whole rock and trace element analyses will also be completed to compare with the existing analytical data. Sufficient sample was collected and retained from each site for future petrographic studies. The results of the sampling are expected be released as part of the Discover Abitibi Initiative in the spring of 2005.

OGS ACTIVITIES AND RESEARCH BY OTHERS

A number of Ontario Geological Survey (OGS) and Discover Abitibi Initiative mapping and research projects were underway or completed in the Kirkland Lake District. Details of the projects are reported in Baker et al. (2004).

To date, the Abitibi compilation project has produced digital and hard copy (scale 1:100 000) versions of the Timmins, Lake Abitibi, Kirkland Lake, Swayze and Matachewan map areas. A compilation sheet, at a scale of 1:250 000 covering all of the above areas was published in digital format (Ayer, Trowell and Josey 2004) while a hard copy version will be produced in 2005 (Ayer 2004).

B.R. Berger completed the multi-year geological mapping project along Highway 66 from Swastika to Matachewan. The townships of Burt, Holmes and parts of Flavelle and Gross townships were mapped at a scale of 1:20 000 during the 2004 field season (Berger 2004).

Discover Abitibi Initiative

Discover Abitibi released airborne geophysical surveys for the following areas:

- Halliday Dome Area Magnetic and Electromagnetic MEGATEM® II Survey
- Kidd-Munro, Blake River Area Magnetic and Electromagnetic MEGATEM® II Survey
- Round Lake Batholith Area Magnetic Survey
- Central Abitibi Destor-Porcupine – Pipestone Faults Area Magnetic Survey
- Lake Abitibi Area Magnetic Survey
- Northeast and South Timmins Area Gravity Survey
- Kirkland Lake – Larder Lake Area Magnetic Survey

V. Ispolatov, B. Lafrance and B. Dubé completed a two-year project to better understand the regional geologic controls on gold mineralization along the Kirkland Lake "main break" and the Larder–Cadillac deformation zone. The project continued in 2004 with underground studies of gold mineralization at the Macassa Mine and surface geological mapping along the Kirkland Lake gold trend. Several days were also spent completing the Gauthier Township mapping (Ispolatov, Lafrance and Dubé 2004).

A.S. Peloquin and H.L. Gibson completed a two-year project to study the stratigraphy and geochemical signatures of the volcanic rocks in Munro and Currie townships to better understand the base metal mineralization potential of the Kidd-Munro and Kinojevis assemblages (Péloquin and Gibson 2004).

P.J. MacDonald, S.J. Piercey and M.A. Hamilton studied porphyry intrusions spatially associated with gold deposits along the Porcupine–Destor deformation zone. The east trend of porphyries studied, east of the Burrows–Benedict fault, included the Carr Township porphyry in the Kirkland Lake district (MacDonald, Piercey and Hamilton 2004).

S.J. Piercey, M.A. Hamilton, A.S. Péloquin and E. Chaloux studied the geological and stratigraphic relationship between the Blake River Group and the Clifford Stock. The project was initiated to better understand the stratigraphy, volcanic setting, hydrothermal alteration and subvolcanic intrusive rocks and their relationship to volcanogenic massive sulphide and potentially gold deposits in the Blake River Group in Ontario (Piercey et al. 2004).

P.H. Thompson worked on a project to upgrade the metamorphic framework for gold exploration in the Timmins–Kirkland Lake area (Thompson 2004).

G. Grabowski sampled 45 lamprophyre dikes in the Timmins–Kirkland Lake area in order to test for the presence of diamonds (see "Discover Abitibi Initiative – Lamprophyre Sampling Project" under the "Resident Geologist Staff Activities" section, this volume).

Geological Survey of Canada

B.A. Kjarsgaard logged and sampled the new KL-01 and KL-22 kimberlites, discovered by Contact Diamond Corp., for mineralogical and age dating studies (B. McClenaghan, personal communication, 2005).

Carleton University

G. Dix relogged hole LT-1, drilled in 1963 off Dawson Point in Harris Township to test a magnetic anomaly. The hole intersected over 800 feet of Paleozoic sedimentary rocks. There were some important differences in the Ordovician–Silurian boundary noted (G. Dix, personnal communication, 2005).

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Table 1. Summary of claims recorded and assessment work credits filed in the Larder Lake Mining Division - 2004.

Year	Claims Units Recorded	Claim Units Cancelled	Claims Units Active	Total ($)
2004	9738	5484	28 563	10 584 733
2003	6963	6249	28 983	4 895 030
2002	7097	5861	21 940	3 839 275
2001	4308	6229	20 712	2 888 711
2000	4506	9821	22 633	4 532 745

Table 2. Mine production and reserves in the Kirkland Lake Regional Resident Geologist's District - 2004.

Mine	Production to date to end of 2004		Production in 2004		Reserves at end of 2004	
	Tonnage @ Grade	Total Commodity	Tonnage @ Grade	Total Commodity	Tonnage	Grade
Extender Minerals - North Williams	N/A	N/A	99% barite	12 000 t barite	More than 4 years	99% barite
Holloway Mine	4 732 092 tons @ 0.166 ounce per ton Au	783 333 ounce Au	567 691 tons @ 0.140 ounce per ton Au	79 585 ounce Au	Reserve (t) Prv: 470 549 Prb: 869 377 Resource (t) Mea: 160 192 Ind: 243 067 Inf: 53 391	 5.698 6.514 3.840 5.308 6.451
Holt-McDermott Mine	8 178 999 tons @ 0.162 ounce per ton Au	1 322 332 ounce Au	394 000 tons @ 0.139 ounce per ton Au	54 578 ounce Au	N/A	N/A
Kirkland Lake Gold Inc.*	157 434 tons @ 0.279 ounce per ton Au	43 864 ounce Au	81 727 tons @ 0.236 ounce per ton Au	19 266 ounce Au	Reserve (tons) Prv: 586 000 Prb: 735 000 Resource (tons) Mea: 924 000 Ind: 2 329 000 Inf: 643 000	Ounce per ton Au 0.42 0.52 0.37 0.30 0.35

** Kirkland Lake Gold Inc. includes the Wright Hargreaves, Lake Shore, Teck Hughes, Kirkland Lake and Macassa properties. Production figures are for the fiscal year ending April 30, 2004.*

Table 3. Assessment files received in the Kirkland Lake Regional Resident Geologist's District in 2004.

Abbreviations

AEM ..... Airborne electromagnetic survey
AM ..... Airborne magnetic survey
AVLF-EM ..... Airborne Very Low Frequency EM survey
Beep ..... Beep mat survey
Bulk ..... Bulk sampling
DD ..... Diamond drilling
DDH .. .. Diamond drill hole(s)
DGP ..... Down-hole geophysics
Gc ..... Geochemical survey
GL ..... Geological survey
Gv ..... Gravity survey
HLEM ..... Horizontal loop electromagnetic survey
Ind ..... Industrial Mineral Study
IP ..... Induced polarization survey
KIM ..... Micro-Diamond Processing
Lc ..... Linecutting
M ..... Ground magnetic survey
Other ..... Other study
OvD ..... Overburden drill hole(s)
PEM ..... Pulse electromagnetic survey
PGM ..... Platinum group metals
Pr ..... Prospecting
PW ..... Physical work
RE ..... Re-evaluation of surveys
R ..... Resistivity survey
RC ..... Reverse circulation drilling
rTr ..... Trenching
SA ..... Sampling (other than bulk)
sTr ..... Stripping
Ug ..... Underground work
VLEM ..... Vertical loop electromagnetic survey
VLF-EM ..... Very low frequency electromagnetic survey

Township	Company Name "Property Name"	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Angus, Askin, Burnaby, Eldridge, Flett, Gooderham, Hebert, Kenny, Lasalle, Milne, Riddell, Sisk, South Lorrain	Tres-Or Resources Ltd. "Temagami Diamond Claim Project"	2003-2004 (1)	GL, Gc, SA, AM, AEM, Lc, M, HLEM	2.26549, 2.26649, 2.27078, 2.27268, 2.27980, 2.28035, 2.28208	CO-2930, CO-2931, CO-2932
Argyle	Canadian Royalties Inc. "Ashley Lake Property"	2003-2004 (2)	Lc, M, HLEM	2.27471	KL-5302
Argyle, Baden	Novawest Resources Inc. "Solano Property"	2004 (3)	DD(1)(248m), rTr, SA	2.27623, 2.28570	KL-5362, KL-5401
Argyle, Bannockburn, Doon, Hincks, Midlothian, Montrose, Powell, Zavitz	Mustang Minerals Corp. "Bannockburn Ni Property"	2004 (4)	DD(3)(813m)	2.27671	KL-5318
Argyle, Hincks	Phoenix Matachewan Mines Inc. "Argyle Property"	2004 (5)	Lc, M, IP	2.28187	KL-5373
Arnold	Kirkland Lake Minerals Inc.	2002-2004 (6)	DD(2)(232m), SA, Lc, M	2.26503, 2.28467	KL-5297, KL-5375
Askin, Banting, Best, Brigstock, Cassels, Chambers, Gillies Limit, Law, Milne, Olive, Strathcona, Strathy	Temex Resources Corp. "Temagami Diamond Project"	2003-2004 (7)	AEM, AM, Gc, GL, KIM	2.28110, 2.28109	CO-2933
Asquith	Annett, R.	2004 (8)	sTr, SA, GL	2.28389	CO-2934
Asquith, Churchill	O'Connor, T.A.	2004 (9)	sTr, SA	2.28830	CO-2935
Asquith, Churchill, Macmurchy	Skead Holdings Ltd. "Beilby Lake Property"	2002-2004 (10)	SA, GL, Gc	2.26375, 2.26867, 2.26963, 2.27645, 2.28055, 2.28137, 2.28481	CO-2936

Township	Company Name "Property Name"	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Auld, Barr, Cane, Dane, Firstbrook, Henwood, Hudson, Klock, Leo, Lundy, Speight, Van Nostrand	Sudbury Contact Mines Limited "Timiskaming Diamond Project"	2003-2004 (11)	AM, KIM, Gc, M, SA, GL, DD(27)(5159m), Other	2.26151, 2.26888, 2.27852, 2.28006	CO-2937, CO-2938, CO-2939, CO-2940
Baden	Golden Valley Mines Ltd. "Arbade Prospect"	2003-2004 (12)	Lc, IP, M	2.27417, 2.28146	KL-5296, KL-5351
Baden	Golden Valley Mines Ltd. "Rich'Ore Prospect"	2004 (13)	Lc, M, IP	2.27394, 2.28145	KL-5291, KL-5350
Bannockburn	Phoenix Matachewan Mines Inc. "Powell Lake Property/ Bannockburn Property"	2004 (14)	M, HLEM, IP	2.2822	KL-5368
Barnet, Cook, Garrison, Guibord, Harker, Michaud, Thackeray	St Andrew Goldfields Ltd./Royal Victoria Minerals Ltd. "Golden Reward Project"	2003-2004 (15)	Lc, IP, GL, Pr, DD(4)(1233m), SA	2.26779, 2.27670, 2.27673, 2.27685, 2.27689, 2.27714, 2.27716, 2.27914, 2.27999, 2.28012, 2.28013, 2.28018, 2.28101, 2.28157	KL-5264, KL-5308, KL-5309, KL-5312, KL-5313, KL-5321, KL-5325, KL-5335, KL-5339, KL-5342, KL-5349, KL-5353, KL-5365
Beatty	Belmont Resources Inc.	2004 (16)	DD(5)(584m), SA	2.28133	KL-5345
Beatty	Lake Shore Gold Corp. "Highway Project"	2003-2004 (17)	DD(12)(3072m), AEM, SA	2.28549	KL-5400
Beatty	St Andrew Goldfields Ltd. "Beatty Windsor Property"	2003	Pr, SA	2.26585	KL-5261
Ben Nevis, Clifford	Wallbridge Mining Company Limited	2004 (18)	DD(1)(246m)	2.27159	KL-5301
Benoit	Skjonsby, K.E. "Bourkes Mine Property"	2003	Pr, Lc	2.26923	KL-5272
Bernhardt	Golden Valley Mines Ltd. "Amikougami Prospect"	2003-2004 (19)	DD(5)(510m), SA	2.28586	KL-5385
Bernhardt	O'Connor, T.A.	2004 (20)	Pr, SA	2.27955	KL-5334
Bernhardt	TML Ventures Inc. "Amikougami Prospect"	2004 (21)		Technical Report	KL-5370
Bernhardt, Teck	Marion, E.J. "Lakeview Property"	2004 (22)	Lc, M	2.27566	KL-5306
Black	Leahy, M.J.	2004 (23)	sTr, SA	2.28557	KL-5378
Bonis	Seal River Explorations Limited "Departure Creek Property"	2002-2004 (24)	GL, Gc	2.27087	KL-5274
Bowyer, Galna, Marathon, Moody	Boulder Mining Corp./Cangold Ltd. "West Lake Abitibi Property"	2004 (25)	OvD(24)(976m), SA, Gc	2.27609	KL-5307
Bucke	McBride, G.G. "McBride-Walton Property"	2004 (26)	M	2.28474	CO-2941
Bucke, Coleman, Firstbrook, Kittson, Lundy	Tres-Or Resources Ltd. "Temagami North Diamond Project"	2002-2004 (27)	Lc, M, Pr, GL, DD(1)(122m)	2.27015, 2.27234, 2.27331, 2.27653, 2.27700, 2.27702, 2.27854, 2.28138, 2.28219	CO-2942, CO-2943

Township	Company Name "Property Name"	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Bucke, Gillies Limit, Lorrain	Cabo Mining Enterprises Corp. "Cobalt Area Project"	2003-2004 (28)	sTr, GL, SA, Gc, Lc, M, KIM, Pr, PW, DD(7)(856m)	2.27045, 2.27085, 2.27249, 2.27421, 2.27445, 2.27453, 2.27469, 2.27561, 2.27874, 2.27941, 2.27977, 2.28057, 2.28088, 2.28255, 2.28288, 2.28497, 2.28705, 2.28813	CO-2944, CO-2945, CO-2946
Burt	Bastarache, G.	2003-2004 (29)	Pr, sTr, SA, GL, DD(1)(53m)	2.26910, 2.28739	KL-5268, KL-5399
Cairo	Alexandria Minerals Corp. "Matachewan Property"	2003-2004 (30)	Lc, M, IP	2.27630	KL-5310
Cairo	Carmax Exploration Ltd. "Whiskeyjack Creek Property"	2002-2003	Lc, IP	2.27717	KL-5320
Cairo, Powell, Yarrow	Young-Davidson Mines, Limited "Matachewan Gold Project"	2002-2004 (31)	Pr, Gc, M, IP, SA, GL, sTr, rTr, Lc, DD(125)(18718m), Mineral resource estimate	2.27651, 2.27794, 2.28033, 2.28282, 2.28283, 2.28287, 2.28438	KL-5315, KL-5332, KL-5338, KL-5357, KL-5359, KL-5360, KL-5371, KL-5376
Carr	St Andrew Goldfields Ltd.	2004 (32)	Gc, Pr, SA, GL, DD(2)(261m)	2.27472, 2.27642, 2.28631	KL-5298, KL-5324, KL-5395
Cassels	Youngs, B.E. "Sauve Lake Property"	2003	Pr, SA	2.28387	CO-2947
Catharine	Hill, R.V.	2003	Pr	2.26557	KL-5275
Catharine	Link, T.A.	2003	DD(1)(132m), SA	2.27719	KL-5317
Catharine	Metherall, W.	2002-2003	sTr, Pr, SA	2.27742	KL-5319
Catharine, Skead	Salo, A.J.	2004 (33)	Pr, SA	2.28093	KL-5341
Catharine	Hawk Precious Minerals Inc. "MZ Gold Property"	2003	Lc, IP, M, sTr, SA	2.28076	KL-5384
Chamberlain, Dack	Lashbrook, R.L. "Hillcrest Property"	1999-2004 (34)	Lc, M, VLF-EM	2.27840	CO-2948
Chesney Bay, Galna, Northeast Bay, Steele	Queenston Mining Inc. "Lake Abitibi Property"	2002-2004 (35)	Lc, Gc, SA, DD(8)(3159m)	2.26978, 2.27052	KL-5277, KL-5278
Churchill	Annett, R.	2003-2004 (36)	Pr, SA, GL, sTr	2.28344, 2.28623	CO-2949, CO-2950
Churchill	Dirks, P.P., Dirks, P.J. and Hinzer, J.B. "Shining Tree Property"	2004 (37)	IP	2.28922	CO-2951
Churchill, Fawcett, Kelvin, Knight, Leonard, Macmurchy, Natal, Tyrrell	International KRL Resources Corp. "Copper Hill Project"	2003-2004 (38)	DD(20)(2988m), SA, AEM, AM, RC(3)(325m)	2.26552, 2.27076, 2.27335, 2.27639, 2.28302	CO-2952, CO-2953, CO-2954, CO-2955
Coleman	Traimer, H.	2004 (39)	PW	2.27922	CO-2956
Dokis	Marion, E.J. "Malamute Property"	2003-2004 (40)	DD(2)(83m)	2.2731	KL-5314
Eby	Dufresne, R.J. "Highway 11 Property"	2003	sTr, SA	2.27283	KL-5287
Eby	GLR Resources Inc.	2003-2004 (41)	SA, Gc	2.26942, 2.27176	KL-5271, KL-5311

Township	Company Name "Property Name"	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Eby, Otto	Marion, E.J. "Plinky Property"	2002-2004 (42)	DD(5)(109m), SA	2.27755, 2.28124	KL-5323, KL-5354
Elliott	Tiger Gold Exploration Corporation "50 Ghost Detail East/West Grid"	2003-2004 (43)	Lc, M, VLF-EM	2.26883, 2.26917, 2.27070, 2.27156, 2.27195, 2.27307, 2.27855, 2.28009	KL-5266, KL-5269, KL-5281, KL-5282, KL-5290, KL-5293, KL-5343, KL-5352
Elliott, Harker	The Perron Gold Corporation "Iris Property"	2004 (44)	Lc, M, VLF-EM	2.27233, 2.27260, 2.27419, 2.27615, 2.28258, 2.28366, 2.28539	KL-5284, KL-5303, KL-5304, KL-5364, KL-5381, KL-5394
Garrison	Moneta Porcupine Mines Inc. "Moneta-Garrison Property"	2004 (45)	DD(3)(864m), SA	2.27812	KL-5327
Garrison	Moses, J.R.	2004 (46)	RE	2.2712	KL-5279
Garrison	The Perron Gold Corporation "Gwen 64 Property"	2004 (47)	Lc, M, VLF-EM	2.27328	KL-5289
Garrison, Rand	Canadian Johns-Manville Co., Limited "Garrison Project"	1950-1987	GL, DD, Ug	Donation	KL-5330
Gauthier	Egg, H. "Moose Crossing Property"	2004 (48)	Gc	2.28194	KL-5361
Gauthier	Queenston Mining Inc. "Anoki-McBean Project"	2002-2003	DD(55)(20295m), SA	2.27871, 2.27905	KL-5337, KL-5355
Gauthier	Tiger Gold Exploration Corporation	2004 (49)	Lc, M, VLF-EM	2.28639	KL-5393
Gauthier, Hearst, McElroy, McVittie, Rattray, Skead	Skead Holdings Ltd.	2003-2004 (50)	GL, RE, SA, Gc	2.26450, 2.27920	KL-5273, KL-5340
Gauthier, Lebel	Queenston Mining Inc. "Munro Project"	2002-2003	DD(4)(2359m), SA	2.27867	KL-5344
Gillies Limit	Watts, H.A.	2003	rTr	2.27422	CO-2957
Grenfell	1572774 Ontario Inc. "McCombe Property"	2004 (51)	sTr	2.28155	KL-5356
Grenfell, Teck	Hinterland Metals Inc. "Teck Project"	2004 (52)	rTr	2.28644	KL-5392
Guibord	Barrick Gold Corporation "Fenn-Gib Property"	2002	Lc, IP, M	2.28833	KL-5396
Guibord	Gervais, L.N.	2004 (53)	Pr, SA	2.27378	KL-5305
Guibord, Hislop	Moneta Porcupine Mines Inc.	2004 (54)	IP	2.27244	KL-5288
Guibord, McCool, Michaud, Munro	St Andrew Goldfields Ltd. "Four Corners Property"	2003-2004 (55)	DD(5)(507m)	2.26980	KL-5276
Guibord, Munro	Pangea Goldfields Inc. "Fenn-Gib Property"	2002	DD(5)(1465m), SA, Lc, M, IP	2.27367	KL-5295
Harker	Perrex Resources Inc. "New North/South Grid"	2004 (56)	Lc, M, VLF-EM	2.27354, 2.27406, 2.27779	KL-5294, KL-5300, KL-5326
Haultain, Nicol	Grant Forest Products Corp "Calcite Creek Property"	2004 (57)	Ind	2.27165	CO-2958
Hepburn, Sargeant	Seal River Explorations Limited "Esker Property"	2003	Gc	2.26889	KL-5267
Holloway	Obradovich, T.J.	2002	DD(1)(201m), SA	2.26405	KL-5265
Holloway	Tiger Gold Exploration Corporation "H and L Group"	2003-2004 (58)	Lc, M, VLF-EM	2.26849, 2.28781, 2.28812, 2.28858	KL-5263, KL-5398

Township	Company Name "Property Name"	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Holloway, Tannahill	Sheldon-Larder Mines Limited "Magusi River Property"	2004 (59)	Lc, IP	2.28225	KL-5369
Holmes	Cunningham, L.J.	2004 (60)	Pr	2.27405	KL-5292
Hudson	Windsor, K.G.	2003	Lc, M, Pr	2.26808	CO-2959
Ingram	Marshall, F.D.	2003	DD(1)(321m), SA	2.28266	CO-2960
Katrine	Katrine Exploration and Development Inc. "Row Lake Property"	2003	Lc	2.26943	KL-5270
Katrine	Katrine Exploration and Development Inc. "Walsh Mine Property"	2004 (61)	PW	2.27712	KL-5316
Kerrs	Sahelian Goldfields Inc.	2004 (62)	Gc	2.27944	KL-5336
Knight	Bear Paw Resources Inc.	2002-2003	DD(1)(85m), SA, GL	2.27439	CO-2961
Knight, Natal	International KRL Resources Corp. "Decker Prospect Joint Venture"	2004 (63)	DD(8)(1009m), SA	2.27549	CO-2962
Lamplugh	Falconbridge Limited "LPG-12 Property"	2004 (64)	Lc, M, HLEM	2.28341	KL-5358
Lebel	Kirkland Lake Gold Inc.	2004 (65)	Pr, SA	2.27933	KL-5333
Lebel	Marion, E.J. "Continental-Federal Extension Group"	2004 (66)	Pr, SA	2.28313	KL-5382
Lebel	Queenston Mining Inc. "Gull Lake Property"	2003	DD(1)(902m), SA	2.28381	KL-5374
Lebel, Morrisette	O'Connor, T.A.	2004 (67)	Pr, SA, sTr	2.27248, 2.27814	KL-5286, KL-5329
Lundy	Pollock, J.W.	2003-2004 (68)	Lc, M, KIM	2.26951, 2.28620	CO-2963
Macmurchy	Practical Exploration & Development Corp. "Caswell Mine Property"	2003-2004 (69)	Pr, SA	2.27494, 2.27659	CO-2964
Macmurchy	Rosko, P.A. "Bennett Project"	2003	rTr, SA	2.27804	CO-2965
Macmurchy	World Ventures Inc. "Triton Property"	2004 (70)	Lc, M	2.27753	CO-2966
Maisonville	Bonhomme, L. "Goose Egg Lake Property"	2002-2004 (71)	Lc, IP, HLEM	2.28303	KL-5390
Marriott	Plato Gold Corp.	2004 (72)	Lc, IP, M	2.27278	KL-5285
McCool	Lalonde, D.J./Robitaille, R.R.	2004 (73)	M, VLF-EM	2.28253	KL-5367
McGarry	Armistice Resources Ltd. "Virginiatown Gold Project"	2004 (74)		Technical Report	KL-5331
McGarry	Salo, A.J.	2002-2004 (75)	Pr, SA, Other	2.26792, 2.27227, 2.28096, 2.28221, 2.28590, 2.28680, 2.28703	KL-5260, KL-5283, KL-5346, KL-5363, KL-5383, KL-5389
McGarry	Transpacific Resources Inc.	2004 (76)	DD(2)(204m)	2.27596	KL-5328
McVittie	Queenston Mining Inc.	2004 (77)	GL	2.28679	KL-5391
Michaud	Falconbridge Limited "MI-66 Property"	2004 (78)	Lc, M	2.28342	KL-5372

Township	Company Name "Property Name"	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Michaud	Moneta Porcupine Mines Inc. "Golden Highway Project"	2002-2004 (79)	Lc, IP, DD(1)(231m)	2.28298, 2.28790	KL-5388, KL-5397
Mickle	Canadian Prospecting Ventures Inc. "Silverclaim Property"	2003-2004 (80)	Lc, M, sTr, SA	2.27684, 2.27713	CO-2967
Mickle	Welsh Silver Mines Limited	2004 (81)	sTr	2.28179	CO-2968
Mickle, Roadhouse	Grant Forest Products Corp. "Mickle Property"	2002-2004 (82)	GL, Lc, M, Ind.	2.27271	CO-2969
Munro	M.C. Group Management Limited "Munro Croesus Group"	1918-1978	SA, Bulk, Ug, GL, DD	Donation	KL-4802
Nordica	Big Red Diamond Corporation "Windsor/Edwards Property"	2004 (83)	OvD(11)(215m)	2.28466	KL-5386
Otto	Grant Forest Products Corp.	2002-2003	Ind.	2.27149	KL-5280
Otto, Teck	Queenston Mining Inc. "Vigrass Lake Property"	2003	DD(4)(2227m), SA	2.28402	KL-5377
Pacaud	Boston Creek Mines Limited	2004 (84)	sTr	2.28227	KL-5366
South Lorrain	Gilead Mineral Corp. "Veinlode Property"	2000, 2004 (85)	DD(1)(569m), SA	2.27868, 2.27839	CO-2970
South Lorrain	Gore, J.A.	2003	Pr	2.26855	CO-2971
South Lorrain	Hanes, D.R. "Windy Lake Claims"	2003	Pr, sTr, SA	2.27286	CO-2972
South Lorrain	Wolverine Exploration & Mineral Recovery "Montreal River Claims"	2003-2004 (86)	Pr, SA	2.27288, 2.28646	CO-2973
Strathy	Adair, A.W.	2003-2004 (87)	Pr, RE	2.28268	CO-2974
Strathy	Guppy, M.A. "Bernice Lake Claims"	2003	sTr	2.27139	CO-2975
Teck	Diamond Lake Resources Inc.	2004 (88)	Lc, M, VLF-EM	2.27454	KL-5299
Teck	Golden Valley Mines Ltd. "Winnie Lake Prospect"	2003	EM, IP, Lc, M	2.26872	KL-5262
Teck	K[illegible]kland Lake Gold Inc.	2004 (89)	DD(6)(681m), SA	2.27607	KL-5380
Teck	Queenston Mining Inc. "Amalgamated Kirkland Property"	2003	DD(8)(3026m), SA	2.28405	KL-5379
Teck	Zenda Capital Corp. "Columbus Kirkland Property"	2004 (90)	Pr, SA	2.27954	KL-5348
Teck	Zenda Capital Corp. "Kirkland Basin Property"	2004 (91)	DD(2)(271m), SA	2.28657	KL-5387
Thackeray	Falconbridge Limited/Noranda Inc. "St Andrew Goldfields Ltd. South Property"	2004 (92)	Lc, M, HLEM, IP	2.2805	KL-5347
Tyrrell	Clark, A.H.	2003	rTr, Pr, SA	2.26369	CO-2976
Tyrrell	Goldeye Explorations Limited "Lacarte Option/Tyrrell Property"	2002-2004 (93)	DD(32)(4310m), SA, IP, sTr, GL	2.27327, 2.27786, 2.28100, 2.28534	CO-2977, CO-2978, CO-2979
Tyrrell	Goldeye Explorations Limited/Temex Resources Corp. "Juby JV Property"	2003-2004 (94)	DD(12)(2115m), SA, GL	2.28272	CO-2980
Tyrrell	Lacarte, A.A. "Athena Property"	2004 (95)	GL, sTr, SA	2.28428	CO-2981
Tyrrell	MacCallum, R. "MacCallum - Pinkerton Property"	2004 (96)	DD(1)(79m)	2.28047	CO-2982

Township	Company Name "Property Name"	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Tyrrell	MacCallum, R. "Owl Lake Property"	2003-2004 (97)	Lc, M	2.27986	CO-2983
Tyrrell	O'Connor, T.A.	2003-2004 (98)	RE, Pr, SA	2.26841, 2.28938	CO-2984
Tyrrell	Pinkerton, G.D.	2003	PW, SA	2.27629	CO-2985
Tyrrell	Shining Tree Resources Ltd. "Indian Lake Project"	2003	sTr, GL, SA, RE	2.26933	CO-2986
Tyrrell	Shining Tree Resources Ltd. "Porphyry Lake Project"	2003	sTr, RE, GL, SA	2.26987	CO-2987
Tyrrell	Swain, S.L.	2004 (99)	Pr, SA	2.28074	CO-2988
Tyrrell	Temex Resources Corp. "Juby Project"	2002-2003	Lc, Gc, SA, DD(20)(3737m)	2.27676, 2.28409	CO-2989, CO-2990
Van Hise	W. Johnson Mining & Oil Field Services Ltd. "Firth Lake Property"	2003	DD(1)(412m), GL	2.26874	CO-2991
Walker	Cosby, M.S.	2003-2004 (100)	SA	2.27463	KL-5322

Table 4. Exploration activity in the Kirkland Lake Regional Resident Geologist's District - 2004.

Abbreviations

AEM ..... Airborne electromagnetic survey
AM ..... Airborne magnetic survey
ARA ..... Airborne radiometric survey
Beep ..... Beep Mat survey
BS ..... Bulk sampling
DD ..... Diamond drilling
DDH ..... Diamond drill hole(s)
DGP ..... Down-hole geophysics
Gc ..... Geochemical survey
GL ..... Geological Survey
GP ..... Ground Geophysics unspecified type
Gv ..... Gravity survey
HLEM ..... Horizontal loop electromagnetic survey
IP ..... Induced polarization survey
Lc ..... Linecutting
M ..... Ground magnetic survey
Met ..... Metallurgical testing
OvD ..... Overburden drilling
ODH ..... Overburden drill hole(s)
PEM ..... Pulse electromagnetic survey
Pr ..... Prospecting
R ..... Resistivity survey
SA ..... Sampling (other than bulk)
Seismic ..... Seismic survey
SP ..... Self-potential survey
sTr ..... Stripping
rTr ..... Trenching
UG ..... Underground exploration/development
VLEM ..... Vertical loop electromagnetic survey
VLF-EM ..... Very low frequency electromagnetic survey

No	Company/Individual (Occurrence Name or Property)	Township/Area	Exploration Activity
1-100	See Table 3		
5	Phoenix Matachewan Mines Inc. (Argyle Gold Property)	Argyle	IP, Pr, GL, DD(18), SA
101	Temex Resources Corp. (Wilson Lake Project)	Askin, Best, Brigestock, Chambers, Gillies Limit, Law, Milne, Strathcona, Torrington	Gc, KIM
12	Golden Valley Mines Ltd. (Arbade Property)	Baden	Lc, GP, DD

No	Company/Individual (Occurrence Name or Property)	Township/Area	Exploration Activity
13	Golden Valley Mines Ltd. (Rich'Ore Prospect)	Baden	DD
4	Mustang Minerals Corp. (Bannockburn Property)	Bannockburn	AEM, AM, DD, SA, GL
102	Vedron Gold Inc./Globex Mining Enterprises Inc. (Ramp Property)	Beatty	DD(11), SA, IP
103	Apollo Gold Corp. (Black Fox Project)	Beatty, Hislop	DD(276 000'), SA, Ug
18	Wallbridge Mining Company Limited	Ben Nevis	DD(8)(1850m), SA
104	Golden Valley Mines Ltd. (Winnie Lake Grid)	Bernhardt, Teck	Lc, M, HLEM, IP
105	Carmax Explorations Ltd. (Whiskeyjack Creek Property)	Cairo	DD(10)(2000m), SA
106	Golden Valley Mines Ltd. (Mindoka Prospect)	Catharine, Pacaud	DD(3), SA
107	Dianor Resources Inc.	Chamberlain, Pacaud	Petrography, KIM, DD(6), M
108	Randsburg International Gold Corp.	Chambers, Strathy	DD
109	Brigadier Gold Limited	Clifford	Gc
110	Dianor Resources Inc. (Cluster Project)	Davidson, Dunmore, Flavelle, Holmes, Michie, Nordica, Sheba, Truax, Terry	Gc, SA, RC, M, Pr, OvD(18)
111	Liberty Mineral Exploration Inc. (McAra Lake Property)	Dufferin	DD(15), SA
112	GLR Resources Inc.	Eby, Otto	DD(5), SA
113	Brigadier Gold Limited (Chartre-Dufresne Gold Property)	Flavelle, Holmes	IP, R, M, rTr, DD(12), SA
114	Queenston Mining Inc. (Anoki Property)	Gauthier	Resource Estimate
115	Queenston Mining Inc. (Princeton Property)	Gauthier	DD(5)(4400m), SA
116	Brigadier Gold Ltd. (Larder Lake Diamond Project)	Gauthier, Hearst, McElroy, McVittie	Gc
117	Contact Diamond Corporation (Timiskaming Diamond Project)	Klock, Van Nostrand	DD(7000m), SA, AM, AEM
118	Harte Gold Corp. (Decker Property)	Knight, Natal	DD(8)(1009), SA
119	Temex Resources Corp. (Brett Property)	Latchford area	DD(16)(2561m), SA, IP, GL, Pr
120	Vault Minerals Inc. (Lebel Gold Property)	Lebel	DD(9)(1139m), SA
121	International KRL Resources Corp. (Copper Hill Project)	Macmurchy	AM, GL, Pr
122	International KRL Resources Corp. (Golden Sylvia Iron Formation)	Macmurchy	RC(53)(4974m), SA
123	Goldstake Explorations Inc.	McGarry	DD(2)(252m), SA
124	NFX Gold Inc.	McGarry, McVittie	DD(35)(5500m), SA
125	Acrex Ventures Ltd. (55 Zone)	Michaud	DD(3)(1118m), SA

No	Company/Individual (Occurrence Name or Property)	Township/Area	Exploration Activity
126	Acrex Ventures Ltd. (Western Zone)	Michaud	DD(6)(2220m), SA
127	Namex Explorations Inc. (Wilder Property)	Milner	Pr, SA
128	Big Red Diamond Corporation (Munro-Beatty Property)	Munro	Lc, Gc, GL, DD, GP
129	Croesus Gold Inc.	Munro	DD(6)(900m), SA
130	Millstream Mines Ltd. (Potter Property)	Munro	DGP
131	Hinterland Metals Inc. (Teck Property)	Teck	Pr, sTr, SA, Lc, GP
132	Queenston Mining Inc. (Kirkland Lake West Project)	Teck	Lc, GL, rTr
91	Zenda Capital Corp.	Teck	DD(9)(1055m), SA, sTr
133	Temex Resources Corp. (Juby Lease Property)	Tyrrell	DD(11)(2600m), rTr, SA
134	Temex Resources Corp. (Juby Main Zone)	Tyrrell	DD(15)(3093), SA, Resource Estimate

Table 5. Property visits conducted by the Kirkland Lake Regional Resident Geologist and staff in 2004.

Number (keyed to Figure 2)	Property/Occurrence (MDI Number)
1	Big Bend - Misema River, McElroy Twp. (N/A)
2	Bonsall, Haultain Twp. (MDI41P10NE00030)
3	Canadian Arrow, Hislop Twp. (MDI42A08NW00004)
4	Canagau, Ben Nevis Twp. (MDI32D05SE00041)[1]
5	Capitol, Haultain Twp. (MDI41P10NE00022)
6	Castle-Trethewey, Haultain Twp. (MDI41P10NE00023)
7	Cunningham, Holmes Twp. (N/A)
8	Duggan, Knight Twp. (MDI41P11NE00023)
9	GLR, Eby Twp. (MDI42A01SE00006)
10	Golden Sylvia, Macmurchy Twp. (MDI41P11SE00076)[1]
11	Goodfish, Teck Twp. (NEW)
12	Hwy 624 Bend (DCL-KL0315 Area), Skead Twp. (N/A)
13	Juby, Tyrrell Twp. (MDI41P10SW00013)
14	Kells, Cairo Twp. (MDI41P15NE00033)
15	Kelly-Kirkland, Otto Twp. (MDI42A01SE00032)
16	Lake Zone, McVittie Twp. (MDI32D04SE00079)[1]
17	Laskowski, Pacaud Twp. (MDI31M13NW00051)
18	MacCallum-Lacarte, Tyrrell Twp. (MDI41P11NE00024)
19	Mann, Milner Twp. (MDI41P10SW00004)
20	Merico, Tudhope Twp. (MDI41P09NW00050)
21	Middleton Quarry, Harley Twp. (MDI31M12NE00005)
22	Miller Lake, Haultain Twp. (MDI41P10NE00024)
23	Milligan Boulders, Milligan Twp. (MDI42A09NE00072)
24	Neph 3, Otto Twp. (MDI42A01SE00085)

Number (keyed to Figure 2)	Property/Occurrence (MDI Number)
25	Otto-Ra, Otto Twp. (MDI42A01SE00014)
26	Pederson Quarry, Chamberlain Twp. (NEW)
27	Roche, Ben Nevis Twp. (MDI32D05SE00040)
28	Siscoe, Nicol Twp. (MDI41P10NE00009)
29	Toburn, Teck Twp. (MDI42A01NE00019)
30	Tyranite, Tyrrell Twp. (MDI41P11NE00013)

1 – Described in "Property Examinations" section, this report
NEW – MDI number to be created
N/A – Does not meet the minimum requirements for an MDI

Table 6. Publications received by the Kirkland Lake Regional Resident Geologist's office in 2004.

Title	Author	Type and Year of Publication
Report of Activities 2003, Resident Geologist Program, Timmins Regional Resident Geologist Report: Timmins and Sault Ste. Marie Districts	Atkinson, B.T., Hailstone, M., Scim, G.Wm., Wilson, A.C., Draper, D.M., Butorac, S. and Cooper, G.R.	Ontario Geological Survey, Open File Report 6130, 2004 (106130)
Summary of Field Work and Other Activities 2004	Baker, C.L., Debicki, E.J., Parker, J.R., Kelly, R.I., Ayer, J.A. and Easton R.M.	Ontario Geological Survey, Open File Report 6145, 2004 (106145)
Precambrian geology of the Burt-Holmes area	Berger, B.R.	Ontario Geological Survey, Preliminary Map P.3554, scale 1:20 000, 2004 (403554)
Petrology of the Renard igneous bodies: Host rocks for diamond in the northern Otish mountains region, Quebec	Birkett, T.C., McCandless, T.E. and Hood, C.T.	8th International Kimberlite Conference Long Abstract, 2003 (15261)
A comparison of selective leach signatures over kimberlites and other targets	Burt, A.K. and Hamilton, S.M.	Ontario Geological Survey, Open File Report 6142, 2004 (106142)
The role of subvolcanic sills in the generation of massive sulfide deposits	Campbell, I.H., Franklin, J.M., Gorton, M.P., Hart, T.R. and Scott, S.D.	Economic Geology, Vol. 76, pp. 2248-2253, 1981 (15258)
Report of Activities 2003, Resident Geologist Program, Kirkland Lake Regional Resident Geolgist Report: Sudbury District	Cosec, M., Gaudreau, J.M., Selway, J.B. and Beauchamp, S.A.	Ontario Geological Survey, Open File Report 6139, 2004 (106139)
Report of Activities 2003, Resident Geologist Program, Regional Land Use Geologist Report: Northwestern, Northeastern and Southern Ontario Regions	Debicki, R.L., Drost, A.P., Fraser, R.J., Rowell, D.J. and Yule, G.R.	Ontario Geological Survey, Open File Report 6133, 2004 (106133)
Geology, Tectonometamorphic Map of Ontario, Canada and parts of the United States of America	Easton, R.M. and Berman, R.G.	Geological Survey of Canada, Open File 1810; Ontario Geological Survey, Preliminary Map P.3533, scale 1:1 500 000, 2004 (403533)
Geology and geochemistry of the Potterdoal Cu-Zn deposit: Munro Township, Ontario	Epp, M. and Crocket, J.H.	Economic Geology Monograph 10, pp. 593-612, 1999 (15259)
Target vectoring using lithogeochemistry: Applications to the exploration for volcanic-hosted massive sulphide deposits	Galley, A.G.	CIM Bulletin, Vol. 88, pp.15-27, 1995 (15257)
Composite synvolcanic intrusions associated with Precambrian VMS-related hydrothermal systems	Galley, A.G.	Mineralium Deposita, Vol. 38: pp. 443-473, 2003 (15256)
Precambrian geology, parts of Godfrey, Turnbull, Carscallen and Bristol townships	Hathway, B. and Hocker, S.M.	Ontario Geological Survey, Preliminary Map P.3544, scale 1:10 000, 2004 (403544)
The temporal evolution of North American kimberlites	Heaman, L.M. and Kjarsgaard, B.A.	8th International Kimberlite Conference Long Abstract, 2003 (15262)
Precambrian geology of Gauthier Township transect	Ispolatov, V.O. and Lafrance, B.	Ontario Geological Survey, Preliminary Map P.3546, scale 1:10 000, 2004 (403546)

Title	Author	Type and Year of Publication
Indicator Mineralogy of Kimberlite Boulders from Eskers in the Kirkland Lake and Lake Timiskaming Areas, Ontario, Canada	Kjarsgaard, I.M., McClenaghan, M.B., Kjarsgaard, B.A. and Heaman, L.M.	Lithos, Vol. 77, pp. 705-731, 2004 (15263)
Evaluation of the role of Cambrian granites in the genesis of world class VHMS deposits in Tasmania	Large, R., Doyle, M., Raymond, O., Cooke, D., Jones, A. and Heasman, L.	Ore Geology Reviews, Vol. 10, pp. 215-230, 1996 (15255)
Report of Activities 2003, Resident Geologist Program, Red Lake Regional Resident Geologist Report: Red Lake and Kenora Districts	Lichtblau, A., Hinz, P., Ravnaas, C., Storey, C.C., Kosloski, L. and Raoul, A.	Ontario Geological Survey, Open File Report 6127, 2004 (106127)
The Seed and Triple B Kimberlites and Associated Sediments, Lake Timiskaming, Ontario	McClenaghan, M.B. and Kjarsgaard, B.A.	Geological Survey of Canada, Open File 4492, 2003 (119088)
Mineralogy of the McLean Kimberlite and Associated Glacial Sediments, Lake Timiskaming, Ontario	McClenaghan, M.B., Kjarsgaard, I.M. and Kjarsgaard, B.A.	Geological Survey of Canada, Open File 1762, 2003 (119089)
Kimberlite Indicator Mineral Chemistry and Till Geochemistry around the Seed and Triple B Kimberlites, Lake Timiskaming, Ontario	McClenaghan, M.B., Kjarsgaard, I.M. and Kjarsgaard, B.A.	Geological Survey of Canada, Open File 4822, 2004 (119087)
Report of Activities 2003, Resident Geologist Program, Kirkland Lake Regional Resident Geologist Report: Kirkland Lake District	Meyer, G., Grabowski, G.P.B., Guindon, D.L. and Chaloux, E.C.	Ontario Geological Survey, Open File Report 6131, 2004 (106131)
Limestones of Ontario	Miller, W.G.	Ontario Department of Mines Annual Report, Vol.13, Pt.2, 1904 (100013)
Airborne magnetic and electromagnetic surveys, residual magnetic field and electromagnetic anomalies, Shaw Dome area	Ontario Geological Survey	Ontario Geological Survey, Map 81 854, scale 1:20 000, 2004 (481854)
Airborne magnetic and electromagnetic surveys, residual magnetic field and electromagnetic anomalies, Shaw Dome area	Ontario Geological Survey	Ontario Geological Survey, Map 81 855, scale 1:20 000, 2004 (481855)
Airborne magnetic and electromagnetic surveys, residual magnetic field and electromagnetic anomalies, Shaw Dome area	Ontario Geological Survey	Ontario Geological Survey, Map 81 856, scale 1:20 000, 2004 (481856)
Airborne magnetic and electromagnetic surveys, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Shaw Dome area	Ontario Geological Survey	Ontario Geological Survey, Map 81 857, scale 1:20 000, 2004 (481857)
Airborne magnetic and electromagnetic surveys, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Shaw Dome area	Ontario Geological Survey	Ontario Geological Survey, Map 81 858, scale 1:20 000, 2004 (481858)
Airborne magnetic and electromagnetic surveys, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Shaw Dome area	Ontario Geological Survey	Ontario Geological Survey, Map 81 859, scale 1:20 000, 2004 (481859)
Airborne magnetic and electromagnetic surveys, apparent resistivity and electromagnetic anomalies, Shaw Dome area	Ontario Geological Survey	Ontario Geological Survey, Map 81 860, scale 1:20 000, 2004 (481860)
Airborne magnetic and electromagnetic surveys, apparent resistivity and electromagnetic anomalies, Shaw Dome area	Ontario Geological Survey	Ontario Geological Survey, Map 81 861, scale 1:20 000, 2004 (481861)
Airborne magnetic and electromagnetic surveys, apparent resistivity and electromagnetic anomalies, Shaw Dome area	Ontario Geological Survey	Ontario Geological Survey, Map 81 862, scale 1:20 000, 2004 (481862)
Airborne magnetic survey, colour-filled contours of the residual magnetic field and Keating coefficients, Round Lake Batholith area	Ontario Geological Survey	Ontario Geological Survey, Map 81 876, scale 1:50 000, 2004 (481876)

Title	Author	Type and Year of Publication
Airborne magnetic survey, colour-filled contours of the residual magnetic field and Keating coefficients, Round Lake Batholith area	Ontario Geological Survey	Ontario Geological Survey, Map 81 877, scale 1:50 000, 2004 (481877)
Airborne magnetic survey, colour-filled contours of the residual magnetic field and Keating coefficients, Round Lake Batholith area	Ontario Geological Survey	Ontario Geological Survey, Map 81 878, scale 1:50 000, 2004 (481878)
Airborne magnetic survey, colour-filled contours of the residual magnetic field and Keating coefficients, Round Lake Batholith area	Ontario Geological Survey	Ontario Geological Survey, Map 81 879, scale 1:50 000, 2004 (481879)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Round Lake Batholith area	Ontario Geological Survey	Ontario Geological Survey, Map 81 880, scale 1:50 000, 2004 (481880)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Round Lake Batholith area	Ontario Geological Survey	Ontario Geological Survey, Map 81 881, scale 1:50 000, 2004 (481881)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Round Lake Batholith area	Ontario Geological Survey	Ontario Geological Survey, Map 81 882, scale 1:50 000, 2004 (481882)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Round Lake Batholith area	Ontario Geological Survey	Ontario Geological Survey, Map 81 883, scale 1:50 000, 2004 (481883)
Airborne magnetic survey, colour-filled contours of the residual magnetic field and Keating coefficients, Porcupine Destor-Pipestone faults area	Ontario Geological Survey	Ontario Geological Survey, Map 81 905, scale 1:50 000, 2004 (481905)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Porcupine Destor-Pipestone faults area	Ontario Geological Survey	Ontario Geological Survey, Map 81 906, scale 1:50 000, 2004 (481906)
Airborne magnetic survey, colour-filled contours of the residual magnetic field and Keating coefficients, Lake Abitibi area	Ontario Geological Survey	Ontario Geological Survey, Map 81 919, scale 1:50 000, 2004 (481919)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Lake Abitibi area	Ontario Geological Survey	Ontario Geological Survey, Map 81 920, scale 1:50 000, 2004 (481920)
Airborne gravity survey, terrain-corrected Bouger gravity and flight paths, northwest Timmins area: Groundhog River to Frederick House River	Ontario Geological Survey	Ontario Geological Survey, Map 81 921, scale 1:100 000, 2004 (481921)
Airborne gravity survey, terrain-corrected Bouger gravity and flight paths, northeast Timmins area: Highway 101 corridor	Ontario Geological Survey	Ontario Geological Survey, Map 81 922, scale 1:100 000, 2004 (481922)
Airborne gravity survey, terrain-corrected Bouger gravity and flight paths, south Timmins area: Peterlong Lake to Whitefish River	Ontario Geological Survey	Ontario Geological Survey, Map 81 923, scale 1:100 000, 2004 (481923)
Airborne gravity survey, first vertical derivative of the terrain-corrected Bouger gravity, northwest Timmins area: Groundhog River to Frederick House River	Ontario Geological Survey	Ontario Geological Survey, Map 81 924, scale 1:100 000, 2004 (481924)

Title	Author	Type and Year of Publication
Airborne gravity survey, first vertical derivative of the terrain-corrected Bouger gravity, northeast Timmins area: Highway 101 corridor	Ontario Geological Survey	Ontario Geological Survey, Map 81 925, scale 1:100 000, 2004 (481925)
Airborne gravity survey, first vertical derivative of the terrain-corrected Bouger gravity, south Timmins area: Peterlong Lake to Whitefish River	Ontario Geological Survey	Ontario Geological Survey, Map 81 926, scale 1:100 000, 2004 (481926)
Airborne gravity survey, shaded digital elevation, northwest Timmins area: Groundhog River to Frederick House River	Ontario Geological Survey	Ontario Geological Survey, Map 81 927, scale 1:100 000, 2004 (481927)
Airborne gravity survey, shaded digital elevation, northeast Timmins area: Highway 101 corridor	Ontario Geological Survey	Ontario Geological Survey, Map 81 928, scale 1:100 000, 2004 (481928)
Airborne gravity survey, shaded digital elevation, south Timmins area: Peterlong Lake to Whitefish River	Ontario Geological Survey	Ontario Geological Survey, Map 81 929, scale 1:100 000, 2004 (481929)
Airborne magnetic survey, residual magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 936, scale 1:20 000, 2004 (481936)
Airborne magnetic survey, residual magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 937, scale 1:20 000, 2004 (481937)
Airborne magnetic survey, residual magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 938, scale 1:20 000, 2004 (481938)
Airborne magnetic survey, residual magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 939, scale 1:20 000, 2004 (481939)
Airborne magnetic survey, residual magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 940, scale 1:20 000, 2004 (481940)
Airborne magnetic survey, residual magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 941, scale 1:20 000, 2004 (481941)
Airborne magnetic survey, shaded image of the 2nd vertical derivative of the magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 942, scale 1:20 000, 2004 (481942)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 943, scale 1:20 000, 2004 (481943)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 944, scale 1:20 000, 2004 (481944)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 945, scale 1:20 000, 2004 (481945)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 946, scale 1:20 000, 2004 (481946)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 947, scale 1:20 000, 2004 (481947)

Title	Author	Type and Year of Publication
Airborne magnetic survey, colour-filled contours of the residual magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 948, scale 1:50 000, 2004 (481948)
Airborne magnetic survey, colour-filled contours of the residual magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 949, scale 1:50 000, 2004 (481949)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 950, scale 1:50 000, 2004 (481950)
Airborne magnetic survey, shaded image of the second vertical derivative of the magnetic field and Keating coefficients, Kirkland Lake - Larder Lake area	Ontario Geological Survey	Ontario Geological Survey, Map 81 951, scale 1:50 000, 2004 (481951)
Precambrian geology of Ben Nevis and Katrine townships	Péloquin, A.S.	Ontario Geological Survey, Preliminary Map P.3543, scale 1:20 000, 2004 (403543)
Regional modern alluvium sampling survey of the Cobalt-Elk Lake area, northeastern Ontario	Reid, J.L.	Ontario Geological Survey, Open File Report 6119, 2004 (106119)
Alkali-aggregate reactions in Ontario	Rogers, C., Grattan-Bellew, P.E., Hooton, R.D., Ryell, J. and Thomas, M.D.A.	Canadian Journal of Civil Engineering, Vol. 27, pp. 246-260, 2000 (15260)
Geochemistry of Groundwaters from Jurassic Kimberlites in the Kirkland Lake and Lake Timiskaming Kimberlite Fields, Northeastern Ontario	Sader, J.A., Leybourne, M.I., McClenaghan, M.B. and Hamilton, S.M.	Geological Survey of Canada, Open File 4515, 2003 (119090)
Report of Activities 2003, Resident Geologist Program, Southern Ontario Regional Resident Geologist Report: Southeast and Southwest Ontario Districts, MMIC and Petroleum Resources Centre	Sangster, P.J., Farrow, D., Papertzian, V.C., Lee, C., Barua, M., Laidlaw, D.A., Hemmings, D. and Carter, T.R.	Ontario Geolgical Survey, Open File Report 6132, 2004 (106132)
Report of Activities 2003, Resident Geologist Program, Thunder Bay South Regional Resident Geologist Report: Thunder Bay South District	Schnieders, B.R., Scott, J.F., O'Brien, M.S., Magee, M.A. and Komar, C.	Ontario Geological Survey, Open File Report 6129, 2004 (106129)
Report of Activities 2003, Resident Geologist Program, Thunder Bay North Regional Resident Geologist Report: Thunder Bay North District	Smyk, M.C., White, G.D., Magee, M.A. and Komar, C.	Ontario Geological Survey, Open File Report 6128, 2004 (106128)
Temagami area lake sediment geochemical survey, northeastern Ontario	Takats, P.A. and Dyer, R.D.	Ontario Geological Survey, Open File Report 6144, 2004 (106144)
Gravity driven and in situ fractional crystallization processes in the Centre Hill complex, Abitibi Subprovince, Canada	Theriault, R.D. and Fowler, A.D.	Lithos, Vol. 39, pp. 41-55, 1996 (15254)
Association of lamprophyre dykes with gold mineralization at the Hislop deposit, Matheson, Ontario	Thistle, M.	BSc Thesis, University of Waterloo, Waterloo, Ontario, 2002 (120086)
A syenite-hosted intrusion-related gold deposit at the Hislop Mine, Abitibi greenstone belt, Ontario	Van Lichtervelde, M.	BSc Thesis, University of Waterloo, Waterloo, Ontario, 2002 (120085)

Table 7. Mineral deposits not being mined in the Kirkland Lake Regional Resident Geologist District in 2004.

Abbreviations

AF.....Assessment Files	MLS.....Mining Lands, Sudbury
CMH.....Canadian Mines Handbook	MR.....Mining Recorder
GR.....Geological Report	NM.....The Northern Miner
MDC.....Mineral Deposit Circular	OFR.....Open File Report
MDIR.....Mineral Deposit Inventory record	PC.....Personal Communication

Deposit Name (Township)	Commodity/ MDI No.	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
180 East (Lebel)	Au 32D04SW00336	Measured + indicated 326 700 t @ 4.1 g/t Au	Queenston Mining Inc. (CMH 2003-2004, p.419)	Queenston Mining Inc. website 2004	Inactive
Adams Mine (Boston, Lebel)	Fe 32D04SW00013	12 years open pit reserves at time of mine closure	N/A	N/A	Inactive
Ajax (Strathy)	Cu, Ni, Au, Ag, PGE 31M04SW00022	Drill proven + indicated resource 2 062 505 tons of 0.412% Cu, 0.257% Ni	Northern Platinum Ltd. (55%) (CMH 2003-2004, p. 373)	CMH 2003-2004, p. 373	Inactive
Amalgamated Kirkland (Teck)	Au New	Inferred 2 639 338 t @ 4.5 g/t Au	Queenston Mining Inc. (CMH 2003-2004, p.419)	Queenston Mining Inc. website 2004	Active
Anoki (Gauthier)	Au 32D04SW00069	Measured + indicated Resource 522 300 t @ 5.7 g/t Au Inferred Resource 35 800 t @ 5.7 g/t Au Anoki South Inferred Resource 106 000 t @ 6.5 g/t Au	Queenston Mining Inc. (CMH 2003-2004, p.419)	Queenston Mining Inc. 2nd Quarter Report, June 30, 2004	Active
Armistice (McGarry)	Au 32D04SE00013	Indicated Mineral Resource of 433,981 tons @ 0.250 ounce/ton Au	Armistice Resources Ltd. (75%) – Sheldon-Larder Mines Limited (CMH 2003-2004, p.50)	Armistice Technical Report June 6, 2004	Active
Barber Larder (McGarry)	Au 32D04SE00043	60 000 tons of 0.16 oz per ton Au	NFX Gold Inc. (56.25%) (CMH 2003-2004, p.354)	CMH 1990-91, p.338	Inactive
Black Fox Project (Hislop, Beatty)	Au 42A09SW00165	Mineable reserves 778 000 t @ 8.91 g/t Resource 1.2 million t @ 5.36 g/t Au	Apollo Gold Corporation (CMH 2003-2004, p. 43)	Apollo Gold Corporation website 2002	Active
Blue Quartz (Beatty)	Au 42A09SW00130	109 000 tons of 0.484 oz per ton Au	Thundermin Resources Ltd. (50%) (CMH 2003-2004, p.491)	NM, March 20, 1980	Inactive
Boston Creek (Pacaud)	Au 31M13NW00053	330 000 tonnes of 4.2 g/T Au	Atapa Minerals Limited (50%) (CMH 2003-2004, p.54)	CMH 1998-99, p.52	Inactive
Buffonta (Garrison)	Au 32D05NW00009	400 000 tons of 0.15 oz per ton Au	Gwen Resources Ltd. (60%) - AJ Perron Gold Corporation (40%)(CMH 1996-97, p.26)	CMH 1997-98, p.221	Inactive

Deposit Name (Township)	Commodity/ MDI No.	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Cheminis (McVittie)	Au 32D04SE00019	Measured + indicated 1 619 082 tons @ 0.18 ounce/ ton Au. 924 275 t @ 0.19 ounce/ton Au inferred	NFX Gold Inc. (NFX Press Release November 11, 2003)	NFX Gold Inc. Press Release January 8, 2004	Active
Clenor (Strathy)	Au, Ag 31M04SW00088	24 000 tons of 0.21 oz per ton Au, 1.8 oz per ton Ag	Gwen Resources Ltd. (CMH 1997-98, p.220)	GR 163	Inactive
Commodore (Lebel)	Au 32D04SW00039	738 000 tons of 0.07 oz per ton Au inferred with a higher grade zone of 307 000 tons of 0.11 oz Au per ton inferred	H.Egg, AF (Sudbury Contact Mines Limited AF KL-4447)	AF KL-4447	Inactive
Creek Zone (Hislop)	Au 42A08NW00142	Indicated Resource: Creek – 425 897 t @ 6.33 g/t Au Main – 57 634 t @ 8.72 g/t Au Inferred Resource: Above 225 m 155 720 t @ 5.05 g/t Au Below 225 m 212 012 t @ 6.53 g/t Au	Stroud Resources Ltd. (Stroud Resources Ltd. Press release January 12, 2005	Stroud Resources Ltd. Press release January 12, 2005	Inactive
Diadem (Strathcona)	Cu, Ni 31M04SW00077	450 000 tons of 0.5% Cu, 0.1% Ni to 400 feet	Temex Resources Corp. (CMH 2003-2004, p.486)	MDIR N 0045	Active
Duggan Zone (Knight)	Au 41P11NE000023	1 114 000 tons of 0.07 oz per ton Au	Rosko, P.	George Cross Newsletter Ltd., No 39, February 25, 1997	Active
Eastmaque (Teck)	Au 42A01NE00043	2 132 500 tons of tailings of 0.035 oz per ton Au	Hecla Mining Company (Eastmaque to Equinox Resources Ltd to Hecla in 1994) (CMH 1996-97, p.207-208)	CMH 1991-92, p.142	Inactive
Fenn-Gib (Guibord)	Au 42A09SE00054 42A09SE00187	1.95 million t of 5.13 g/t Au above 250 m level	Barrick Gold Corp. (100% Gib, 70% Fenn, 30% Homestake Canada Inc.) (CMH 2000-2001, p.312, 2002-2003, p. 333)	CMH 2000-2001, p.312	Inactive
Fort Knox (Fawcett, Ogilvie, North Williams)	Cu, Ni 41P11SE00074	3 million tonnes	FNX Mining Company Inc. (CMH 2003-2004, p.194)	AF	Inactive
Garrcon (Garrison)	Au 32D12SW00004	350 900 tons of 0.191 oz per ton Au	Moneta Porcupine Mines Inc. – Jonpol Explorations Limited (OFR 5735, p. 766, CMH 2001-2002, p.249)	Jonpol Explorations Limited News Release, February 2, 1988	Inactive
Golden Harker (Harker, Holloway)	Au 32D05NW00159	500 000 tons of 0.16 oz per ton Au	Golden Harker Explorations Limited (CMH 2003-2004, p.222)	NM, March 7, 1988	Inactive

Deposit Name (Township)	Commodity/ MDI No.	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Gordon Lake (Tyrrell)	Au 41P10NW00006	225 000 tons of 0.20 oz per ton Au to 750 feet	Duncan Gold Resources Inc. – Dalhousie Oil Company Ltd. (AF)	AF	Inactive
Hislop Gold Mine (Hislop)	Au 42A08NW00154	Indicated + inferred 160 000 tons avg. 0.33 oz per ton Au	St Andrew Goldfields Ltd. (CMH 2003-2004, p.441)	CMH 2003-2004, p.441	Inactive
Hislop West (Hislop)	Au 42A09SW00033	334 882 tons @ 0.178 Au	N/A	OFR 5958, p. 7-22	Inactive
Iris (Harker)	Au, W 32D05NW00021	769 756 tons of 0.07 oz per ton Au	The Alberta Gold Corporation (55%) – Perrex Resources Inc. (45%) (CMH 1995-96 p.289)	AF KL-3170	Inactive
Juby (Tyrrell)	Au 41P10SW00013	Indicated resources – 4.46 million t @ 2.20 g/t Au Inferred resource – 1.84 million t @ 2.03 g/t Au	Temex Resource Corp (Press Release February 16, 2005)	Temex Resources Corp Press Release February 16, 2005	Active
LaCarte (Tyrrell)	Au 41P11NE00024	600 000 t @ 6 g/t Au	Goldeye Explorations Ltd. Press Release November 05, 2002	Goldeye Explorations Ltd. Press Release November 05, 2002	Active
Leckie (Strathy)	Au 31M04SW00090	405 000 tons of 0.2 oz per ton Au	Stroud Resources Ltd. (CMH 2003-2004, p.475)	CMH 2000-2001, p.372	Inactive
Ludgate (Michaud, Guibord, Garrison)	Au 42A08NE00159	462 000 tonnes of 5.91 g/t Au	Kinross Gold Corporation (60%) – Coniagas Resources Limited (40%) (CMH 2003-2004, p.133)	TNM February 1, 1999 p. 2.	Inactive
Martin-Bird (Hearst)	Au 32D04SE00143	558 000 tons of 0.114 oz per ton Au	Barrick Gold Corporation (AF KL-3752)	AF KL-3752	Inactive
Matachewan & Young-Davidson (Cairo, Powell, Yarrow)	Au 41P15NE00014 41P15NE00017	Open Pit: Measured Resource 6 330 000 t @ 2.13 g/t Au Indicated Resource 481 600 t @ 2.02 g/t Au Inferred Resource 329 700 t @ 1.34 g/t Au Underground : Inferred Resource 7 802 500 t @ 4.05 g/t Au	Young-Davidson Mines, Limited (CMH 2003-2004, p.534)	Young-Davidson Mines, Limited Press Release August 18, 2004	Active
McBean (Gauthier)	Au 32D04SW00060	Measured + indicated 835 520 t @ 5.1 g/t Inferred 1 835 230 t @ 6.5 g/t	Queenston Mining Inc. (CMH 2003-2004, p.419)	Queenston Mining Inc. website 2002	Active
Newfield (Garrison)	Au 32D12SW000042	450 000 tons of 0.28 oz per ton Au	Jonpol Explorations Limited (58.6%) – Aurado Exploration Ltd. (41.4%) (CMH 2003-2004, p.278)	CMH 1996-97, p.243 and Jonpol Explorations Limited, Project Progress Report, April 10, 1997	Inactive

Deposit Name (Township)	Commodity/ MDI No.	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Omega (McVittie)	Au 32D04SE00017	720 854 tons of 0.16 oz per ton Au	GLR Resources Inc. (CMH 2003-2004, p.213)	CMH 2003-2004, p.213	Inactive
Potter (Munro)	Cu, Zn, Ag, Au, Co 42A09SE00015	Not available	Millstream Mines Ltd. (CMH 2003-2004, p.326)		Active
Ramp Property (Beatty, Carr, Coulson, Wilkie)	Au 42A09SW00133	813 414 tons of 0.235 ounce per ton Au	Globex Mining Enterprises Inc. (CMH 2003-2004 , p.212)	Globex Mining Enterprises Inc. website 2002	Active
Ross (Hislop)	Au 42A08NW00005	1 055 000 tons of 0.125 oz per ton Au	Preston Electrical and Mechanical Ltd. (sold by Giant Yellowknife Mines Limited in 1989 CMH 1990-91, p.188)	CMH 1989-90, p.188	Inactive
Sherman Mine (Chambers, Strathcona, Strathy)	Fe 31M04SW00025	5 years open pit reserves at time of mine closure. Underground resources unknown.	N/A	Northern Daily News, March 7, 1989	Inactive
Southwest Zone (Michaud)	Au 42A08NE00038	3.2 million t avg. 5.98 g/t Au	Moneta Porcupine Mines Inc. (CMH 2002-2003, p.280)	Acrex Ventures Press Release April 22, 2004	Active
Taylor (Taylor)	Au 42A10SE00066 42A10SE00065	West Porphyry – Indicated 735 000 t @ 9.5 g/t Au, Inferred 631 000 t @ 9.9 g/t Au Shoot – Indicated 670 000 t @ 5.5 g/t Au, Inferred 106 000t @ 5.2 g/t Au	St Andrew Goldfields Ltd. (CMH 2003-2004, p.441)	St Andrew Goldfields Ltd. Press Release November 26, 2003	Inactive
Teck Hughes (Teck)	Au 42A01NE00020	375 000 tons of 0.2 oz per ton Au	Kirkland Lake Gold Inc. (CMH 2003-2004, p.289)	CMH 1991-92, p.270	Active
Temagami Copper (Phyllis)	Cu, Ni 41I16NE00004	770 000 tons of 1.04% Cu, 0.46% Ni	N/A	AF	Inactive
Tyranite (Tyrrell, Knight)	Au 41P11NE00013	567 000 tons of 0.18 oz per ton Au	Mill City International Inc. (50%) – Tyranex Gold Inc. (CMH 2003-2004, p.326)	NM 06/93	Inactive
Upper Beaver (Gauthier)	Au, Cu 32D04SW00068	Indicated resource 181 437 t of 7.9 g/t Au, 1.2% Cu	Queenston Mining Inc. (CMH 2003-2004, p.419)	CMH 2003-2004, p.419	Inactive
Upper Canada (Gauthier)	Au 32D04SW00057	Measured + indicated 1 899 973 t @ 6.9 g/t Au	Queenston Mining Inc. (CMH 2003-2004, p.419)	Queenston Mining Inc. website 2004	Inactive
Victoria Creek (Gauthier)	Au NEW	4 958 000 t of 3.43 g/t Au	Sudbury Contact Mines Limited (CMH 2002-2003, p.398)	CMH 1998-99, p.429	Inactive

Table 8. Summary of activities of the Kirkland Lake Regional Resident Geologist's office – 2004.

Activity	Number
Office Visits	2535
Telephone Inquiries	1364
Properties Visited	37
Field Trips Attended	19
Field Trips Given	5
Talks Given	5
Assessment Files and Donations Processed	242
OPAP/Heritage Fund Reports Processed	0
Titles Added to Library Database	80
Drill Holes Added to Drill Core Library	0
MDI Records Updated	287
MDI Records Deleted	6
MDI Records Added	24
MDI Records Deepened	8

Table 9. Gold production in the Kirkland Lake Regional Resident Geologist's District – 2004.

Mine	Township	Tons Milled	Production (oz.Au)	Grade (oz./T)	Years of Production
Aljo	Beatty	2,333	42	0.018	1940
American Eagle	Munro	60	40	0.667	1911
Argyll	Beatty	12,455	851	0.068	1918
Armistice	McGarry	8,282	1,035	0.125	1995, 97 (bulk samples)
Ashley	Bannockburn	157,076	50,123	0.319	1932-36
Barber Larder	McGarry	30,118	3,072	0.102	1988
Barry Hollinger	Pacaud	267,741	77,000	0.288	1918,25-36,44-46
Bidgood	Lebel	586,367	160,184	0.273	1934-51
Blue Quartz	Beatty	500	81	0.162	1923,26,28,34
Bourkes	Benoit	1,298	277	0.213	1918,36-38
Buffonta	Garrison	117,013	12,139	0.104	1981,91-92
Canadian Arrow	Hislop	279,593	17,045	0.061	1980-83
Canamax (Matheson Project)	Holloway	38,675	5,391	0.139	1988
Cathroy Larder (Mirado)	McElroy	89,719	10,231	0.114	1941-44,47,57,87
Centre Hill**	Munro	327,007	422	0.001	1967-70
Cheminis	McVittie	179,013	17,530	0.098	1991-96
Chesterville	McGarry	3,260,439	358,880	0.110	1930-52
Croesus	Munro	5,333	14,859	2.786	1915-18,23,31-36
Eastmaque (tailings)	Teck	1,051,744	28,740	0.027	1988-91
Ethel Copper**	James	17,477	115	0.007	1962-67
Gateford (Swastika)	Teck	103,684	30,068	0.290	1910-47***
Glimmer	Hislop	1,212,592	209,926	0.173	1997-2001
Golden Summit	Maisonville	737	57	0.077	1936-37,45
Gold Hill	Catharine	4,616	660	0.143	1927-28
Gold Pyramid	Guibord	175	36	0.206	1911
Hislop Mine (Hislop East)	Hislop	388,724	48,679	0.125	1990-91,93-95,99-2000
Holloway Mine*	Holloway	4,732,092	783,333	0.166	1993,95(preproduction),96-
Holt-McDermott*	Holloway	8,178,999	1,322,332	0.162	1988-2004

Mine	Township	Tons Milled	Production (oz.Au)	Grade (oz./T)	Years of Production
Hudson-Rand	Teck	6,496	483	0.074	1922
Kerr	McGarry	40,336,512	10,457,441	0.259	1911,38-96
Kirkland Lake	Teck	3,140,283	1,172,955	0.374	1916-60
Kirkland Lake Gold*	Teck	157,434	43,864	0.279	2002-
Kirkland Townsite	Teck	4,230	1,921	0.454	1958-59
Laguerre	McVittie	40,514	7,568	0.187	1937-39
Lake Shore	Teck	17,208,323	8,602,791	0.500	1918-65,82-87,97-98
Macassa	Teck	7,877,532	3,525,389	0.448	1933-99
Macassa (Tailings)	Teck	3,240,890	173,659	0.054	1987-99,02
Matachewan Consolidated	Powell	3,631,908	385,503	0.106	1934-54,80-82
McBean	Gauthier	557,621	45,900	0.082	1984-86
Miller Independence	Pacaud	31	59	1.903	1918
Moffat-Hall	Lebel	16,388	4,780	0.292	1934-35
Morris Kirkland	Lebel	127,253	16,999	0.134	1936-38,40-42
New Telluride	Skead	104	62	0.596	1931-32
Newfield	Garrison	55,000	9,680	0.176	1996(bulk sample)
Omega	McVittie	1,615,081	214,098	0.133	1913,26-28,36-47
Queenston	Gauthier	1,054	177	0.168	1941
Ronda	Macmurchy	24,592	2,727	0.111	1939
Ross	Hislop	6,714,482	995,832	0.148	1936-89
Ryan Lake**	Powell	188,790	1,352	0.007	1948-57,62-64
Stairs	Midlothian	15,835	3,573	0.226	1965-66
Sylvanite	Teck	5,049,536	1,674,808	0.332	1927-61
Teck Hughes	Teck	9,565,302	3,709,007	0.388	1917-68
Toburn	Teck	1,186,316	570,659	0.481	1917-53***
Tyranite	Tyrrell	223,810	31,352	0.140	1939-42
Upper Beaver	Gauthier	580,562	140,709	0.242	1913-72***
Upper Canada	Gauthier	4,648,984	1,398,291	0.301	1938-71
White-Guyatt	Munro	50	10	0.200	1911
Wright Hargreaves	Teck	9,934,327	4,821,296	0.485	1921-65
Young Davidson	Powell	6,218,272	585,690	0.094	1934-57
Total including tailings		**143,421,374**	**41,751,783**	**0.291**	
Total excluding tailings		**139,128,740**	**41,549,384**	**0.299**	
Kirkland Lake Camp (West to East)					
Macassa	Teck	7,877,532	3,525,389	0.448	
Kirkland Lake	Teck	3,140,283	1,172,955	0.374	
Kirkland Lake Gold*	Teck	157,434	43,864	0.279	
Teck Hughes	Teck	9,565,302	3,709,007	0.388	
Lake Shore	Teck	17,208,323	8,602,791	0.500	
Wright Hargreaves	Teck	9,934,327	4,821,296	0.485	
Sylvanite	Teck	5,049,536	1,674,808	0.332	
Toburn	Teck	1,186,316	570,659	0.481	
Total		**54,119,053**	**24,120,769**	**0.446**	
Kirkland Lake Tailings					
Eastmaque (tailings)	Teck	1,051,744	28,740	0.027	
Macassa (Tailings)	Teck	3,240,890	173,659	0.054	
Total		**4,292,634**	**202,399**	**0.047**	

Mine	Township	Tons Milled	Production (oz.Au)	Grade (oz./T)	Years of Production
Virginiatown Camp					
Chesterville	McGarry	3,260,439	358,880	0.110	
Kerr	McGarry	40,336,512	10,457,441	0.259	
Total		**43,596,951**	**10,816,321**	**0.248**	
Holloway Camp					
Holloway Mine*	Holloway	4,732,092	783,333	0.166	
Holt-McDermott*	Holloway	8,178,999	1,322,332	0.162	
Total		**12,911,091**	**2,105,665**	**0.163**	
Hislop Camp					
Glimmer	Hislop	1,212,592	209,926	0.173	
Hislop Mine (Hislop East)	Hislop	388,724	48,679	0.125	
Ross	Hislop	6,714,482	995,832	0.148	
Total		**8,315,798**	**1,254,437**	**0.151**	
Matachewan Camp					
Matachewan Consolidated	Powell	3,631,908	385,503	0.106	
Young Davidson	Powell	6,218,272	585,690	0.094	
Total		**9,850,180**	**971,193**	**0.099**	
Shining Tree Camp					
Ronda	Macmurchy	24,592	2,727	0.111	
Tyranite	Tyrrell	223,810	31352	0.140	
Total		**248,402**	**34,079**	**0.140**	

* *Producer in 2004*
** *Base Metal Production*
*** *Intermittent Production*

Table 10. Some major oxides in samples from Canagau property in Ben Nevis Township compared with unaltered equivalents (Nockolds 1954).

Sample No.	% SiO_2	% Na_2O Sample	% Na_2O Unaltered Equivalent	% MgO Sample	% MgO Unaltered Equivalent	Rock Types
04-GM-30	57.55	0.17	3.69	5.49	3.10	Intermediate intrusion – 6 feet from contact
04-GM-31	58.23	0.26	3.71	4.89	2.66	Intermediate intrusion – chilled margin
04-GM-32	74.30	0.16	3.05	2.90	0.27	Lapilli tuff, rhyolitic in composition

Table 11. Carbonate alteration zones in drill core stored at the Kirkland Lake Remote Drill Core Storage Site (RDCSS).

Twp.	MNDM Hole #	Pallet No.	Co. DDH #	KL Assess File#	Company	Alteration (mainly carbonate)
Asquith	KL0992	A-31	St-I-1		Timmins Gold	very strong carb - tags missing - near tags 14516, 21
Asquith	KL0999	A-32	St-I-4		Patino	very strong carb - tags missing - near tags 14527
Asquith	KL1001	A-15	STA-2		Timmins Gold	Box No. 14117 - see log
Beatty	KL1762	S-207	81-1	1782	Maude Lake	weak carb
Beatty	KL1763	S-207	81-11	1782	Maude Lake	strong carb
Beatty	KL1764	S-206	81-12	1782	Maude Lake	drill core cut in half - boxes tight on top of one another - strong carb - healed randomly oriented fractures
Beatty	KL1766	S-206	81-5	1782	Maude Lake	drill core cut in half - boxes tight on top of one another - strong carb - healed randomly oriented fractures
Beatty	KL1768	S-206	81-10	1782	Maude Lake	drill core cut in half - boxes tight on top of one another - strong carb - healed randomly oriented fractures
Beatty	KL1769	S-206	81-13	1782	Maude Lake	drill core cut in half - boxes tight on top of one another - strong carb - healed randomly oriented fractures
Beatty	KL1931	S-209	TV-87-1	2682	Thunder Valley	strong carb
Beatty	KL1935	S-210	TV-87-6	2682	Thunder Valley	strong carb
Beatty	KL1936	S-210	TV-87-7	2682	Thunder Valley	strong carb
Beatty	KL1943	S-208	TV-87-8	2682	Thunder Valley	weak carb
Ben Nevis	KL2256	S-39	B-3-1		Kiazyk	weak to moderate carb
Blakelock	KL1749	S-162	DF-2-86	651	Deerfoot	at 225 check the assay results - no carb – looks silicified
Bradette	KL1117	S-166	MK-84-4	1988	Newmont	sections with strong carb alt - some sections carb and chl interbands - also IF - chert and magnetite
Carr	KL1509	S-161	CW-3	521	Cominco	carb alt
Catharine	KL2382	S-5	C89-2		Goldteck Mines	moderate to strong carb
Catharine	KL2383	S-4	C89-3		Goldteck Mines Goldfields Mining Corp	moderate to strong carb
Catharine	KL2383	S-5	C89-3		Goldteck Mines	moderate to strong carb
Catharine	KL2384	S-1	C90-1		Goldteck Mines	moderate to strong carb
Catharine	KL2384	S-2	C90-1		Goldteck Mines	moderate to strong carb
Churchill	KL1265	S-292	OCS-6		Shiningtree Gold	Box No. 13086, 87,88 minor carb
Churchill	KL1269	S-292	82-1		Shiningtree Gold	Box No. 13122 minor carb
Churchill	KL1278	S-293	82-10		Shiningtree Gold	Box No. 13162 to 68 carb

Twp.	MNDM Hole #	Pallet No.	Co. DDH #	KL Assess File#	Company	Alteration (mainly carbonate)
Churchill	KL1280	S-293	82-12		Shiningtree Gold	Box No. 13164 to 68 carb
Churchill	KL1281	S-293	82-13		Shiningtree Gold	Box No. 13163 to 68 carb
Flavelle	KL1612	S-215	C-3	2367	Rio Tinto	mod to strong carb
Garrison	KL1678	S-174	B-86-1		Jonpol	green carb
Grenfell	KL0207	S-173	KLKC-4	1890	Minorex	some semi-massive py - check assays
Harker	KL0444	S-60	010-44-1	419	Canamax Resources	pink porphyritic syenite - Iris property?
Harker	KL0445	S-55	010-44-7	419	Amax	pink porphyritic syenite with dis py
Harker	KL0450	S-53	897-23-2		Amax	moderate to strong carb
Harker	KL0468	S-51	939-39-5	54	Amax	unmarked box near boxes marked KL-0468 - pink quartzite
Harker	KL0488	S-52	897-23-7		Amax	moderate to strong carb
Harker	KL0493	S-49	010-44-9	419	Amax	hem-stained si rock? with pegmatite
Harker	KL0562	S-61	010-44-3	419	Amax	Syenite? or trachyte? - pink
Holloway	KL1020	S-57	839-42-24		Amax	mod to strong carb with very siliceous zone
Holloway	KL1039	S-43	839-42-9	56	Canamax Resources	strong carb - good Au potential
Holloway	KL1040	S-43	839-42-15	56	Canamax Resources	strong carb - good Au potential
Holloway	KL1040	S-44	839-42-15	56	Canamax Resources	strong carb - good Au potential
Holloway	KL1141	S-46	839-42-10	56	Argentex	strong carb
Holloway	KL1143	S-35	010-45-33		Canamax Resources	moderate to strong carb
Holloway	KL1143	S-37	010-45-33		Canamax Resources	moderate carb
Holloway	KL1145	S-45	010-45-32		Canamax Resources	moderate to strong carb
Holloway	KL1146	S-44	010-45-34		Canamax Resources	moderate to strong carb
Holloway	KL1153	S-42	010-45-38		Canamax Resources	strong carb at least from 12 to 70'
Holloway	KL1154	S-41	010-45-37		Canamax Resources	moderate to strong carb
Holloway	KL1159	S-35	010-45-35		Canamax Resources	moderate to strong carb
Holloway	KL1159	S-36	010-45-35		Canamax Resources	moderate to strong carb - narrow
Holloway	KL1159	S-37	010-45-35		Canamax Resources	moderate to strong carb (two boxes strong carb alt) - narrow
Holmes	KL2270	S-28	89-2		Sutton-Hanson	minor carb
Katrine	KL2408	S-279			Rivard	strong carb

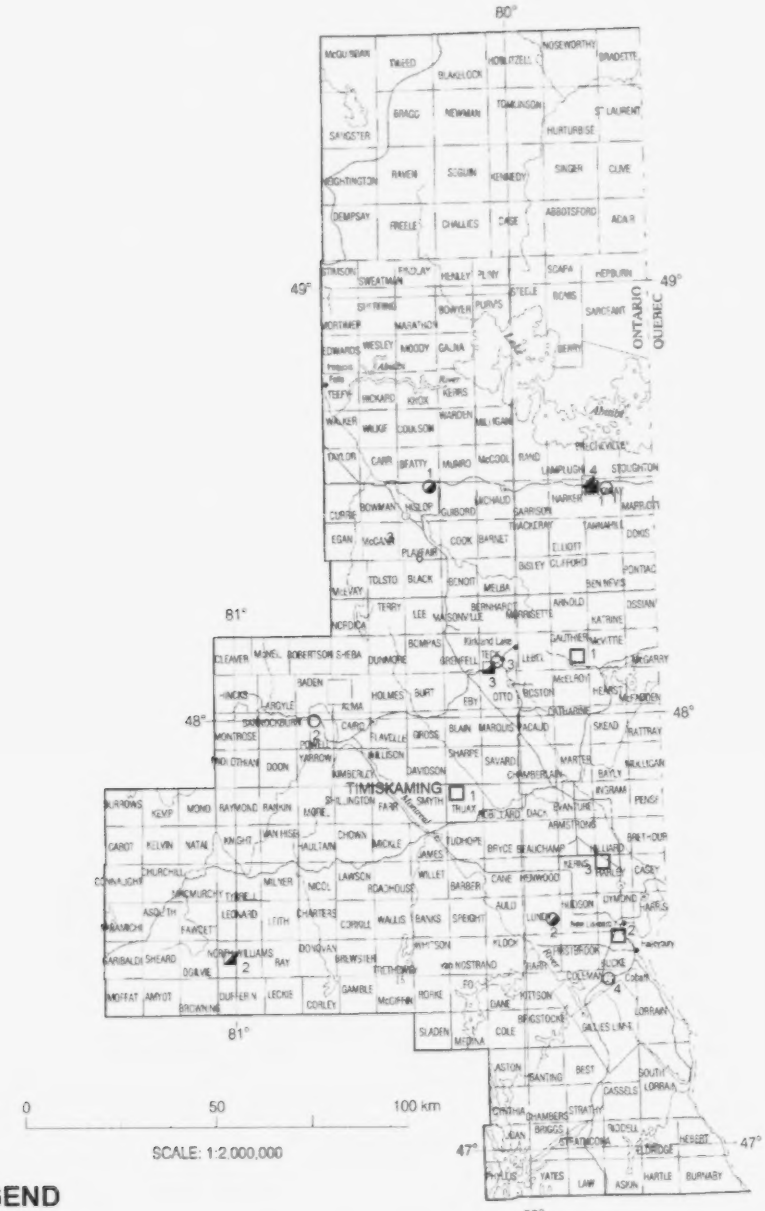
Twp.	MNDM Hole #	Pallet No.	Co. DDH #	KL Assess File#	Company	Alteration (mainly carbonate)
Lebel	KL0233	A-13	74-1	2556	Steward, A.K.	Box No. 14030, 36, 26 - see log - boxes too tight on top of one another
Lebel	KL0419	S-212	N-83-5	2129	North Kirkland Mines	weak to mod carb
Lebel	KL0420	S-212	N-83-6	2129	North Kirkland Mines	weak to mod carb
Lebel	KL0671	S-208	N-83-20		North Kirkland Mines	weak to mod carb
Lebel	KL0672	S-209	N-83-18		North Kirkland Mines	weak carb
Lebel	KL0674	S-213	N-83-21		North Kirkland Mines	weak to mod carb
Lebel	KL0680	S-211	N-83-26		North Kirkland Mines	strong carb
Lebel	KL0689	S-107	N-83-25		North Kirkland Mines	weak to mod carb
Lebel	KL0691	S-106	N-83-17		North Kirkland Mines	weak carb
Lebel	KL0759	S-209	N-83-23		North Kirkland Mines	moderate carb
Lebel	KL1110	S-168	LB-1-81		Lacana	mod to strong - also graphitic sections
Lebel	KL1110	S-169	LB-1-81		Lacana	mod to strong - also graphitic sections
Lebel	KL1209	S-235	83-10		Silver Lake	strong carb
Lebel	KL1311	S-231	83-7		Silver Lake	syenite - hematized?
Lebel	KL1311	S-232	83-7		Silver Lake	syenite - hematized?
Lebel	KL1312	S-231	83-8		Silver Lake	syenite - hematized?
Lebel	KL1314	S-229	83-16		Silver Lake	mod carb
Lebel	KL1314	S-230	83-16		Silver Lake	mod carb
Lebel	KL1315	S-230	83-17		Silver Lake	mod carb
Lebel	KL1320	S-172	83-11		Silver Lake	some carb - silicified? - minor py - check Au assays
Lebel	KL1327	S-232	L-82-2		Silver Lake	strong carb - wide zone
Lebel	KL1328	S-171	L-82-3		Silver Lake	wide zone of strong carb with green carb specks - check documentation for Au
Lebel	KL1600	S-280	SL-86-5		Silver Lake	81-134 possibly silicified (+albitized)
Lebel	KL1601	S-281	SL-86-6		Silver Lake	carb
Lebel	KL1601	S-282	SL-86-6		Silver Lake	carb
Lebel	KL1603	S-289	SL-86-3		Silver Lake	minor carb
Lebel	KL1605	S-281	SL-86-1		Silver Lake	carb
Lebel	KL1606	S-278	SL-86-4		Silver Lake	mod carb
Lebel	KL1607	S-278	SL-85-3		Silver Lake	mod carb

Twp.	MNDM Hole #	Pallet No.	Co. DDH #	KL Assess File#	Company	Alteration (mainly carbonate)
Lebel	KL1609	S-289	SL-86-7		Silver Lake	approx. 79-96 feet carb
Lebel	KL2311	S-65	91-C-2	626	Cunningham	moderate to strong
Lebel	KL2326	S-86	87-2		Lytton Minerals	strong carb
Lebel	KL2327	S-86	87-3		Lytton Minerals	strong carb
Lebel	KL2332	S-91	87-8		Lytton Minerals	mod carb
Lebel	KL2333	S-92	87-9		Lytton Minerals	pink trachyte? with dark green and pale grey spots
Lebel	KL2376	S-82			Lytton Minerals	mod to strong carb
Lebel	KL2419	S-281			Cunningham	strong carb - wide zone
Marriott	KL0813	S-56	049-04-2	427	Canamax Resources	moderate to strong carb
Marriott	KL0817	S-57	049-04-7	427	Canamax Resources	moderate to strong carb - wide zone
Marriott	KL0817	S-58	049-04-7	427	Canamax Resources	moderate to strong carb - wide zone
Marriott	KL0819	S-40	049-04-6	427	Canamax Resources	strong carb - good Au potential
Marriott	KL0819	S-41	049-04-6	427	Canamax Resources	strong carb - good Au potential
McElroy	KL0880	S-277	1050-01-05	70	Amax Minerals	minor carb
McElroy	KL0880	S-278	1050-01-05	70	Amax Minerals	minor carb
McElroy	KL0914	S-63			Amax Minerals	strong carb - check for green carb in log
McElroy	KL0916	S-63			Amax Minerals	green carb
McElroy	KL0918	S-47			Amax Minerals	moderate to strong carb
McVittie	KL0494	S-112	80-1	1619	Lenora	weak to mod carb
McVittie	KL0498	S-116	80-6	1619	Lenora	carb
McVittie	KL0499	S-115	80-7	1619	Lenora	grey carb
McVittie	KL0501	S-114	80-9	1619	Lenora	strong carb and green carb 494 - 513
McVittie	KL0501	S-115	80-9	1619	Lenora	strong carb and green carb
McVittie	KL0504	S-114	L82-1	1619	Lenora	strong carb
McVittie	KL0505	S-114	L82-2	1619	Lenora	strong carb
McVittie	KL0507	S-114	L82-4	1619	Lenora	strong carb
McVittie	KL0508	S-113	L82-5	1619	Lenora	carb
McVittie	KL0509	S-105	L82-6	1619	Lenora	some silicification - weak carb
McVittie	KL0510	S-105	L82-7	1619	Lenora	some silicification - weak carb
McVittie	KL0512	S-105	L82-9	1619	Lenora	some silicification - weak carb
McVittie	KL0513	S-104	L82-10	1619	Lenora	carb
McVittie	KL0513	S-105	L82-10	1619	Lenora	some silicification - weak carb
McVittie	KL0514	S-119	L82-11	1619	Lenora	brown and green carb

Twp.	MNDM Hole #	Pallet No.	Co. DDH #	KL Assess File#	Company	Alteration (mainly carbonate)
McVittie	KL0515	S-119	L82-12	1619	Lenora	brown and green carb
McVittie	KL0516	S-118	L82-13	1619	Lenora	minor to mod some strong carb
McVittie	KL0517	S-118	L82-14	1619	Lenora	minor to mod some strong carb
McVittie	KL0522	S-118	L82-19	1619	Lenora	minor to mod some strong carb
McVittie	KL0523	S-117	L82-20	1619	Lenora	strong carb
McVittie	KL0525	S-117	L82-22	1619	Lenora	strong carb
McVittie	KL0526	S-117	L82-23	1619	Lenora	strong carb
McVittie	KL0526	S-117	L82-23	1619	Lenora	strong carb
McVittie	KL0527	S-117	L82-24	1619	Lenora	strong carb
McVittie	KL0528	S-117	L82-25	1619	Lenora	weak to mod carb
McVittie	KL0529	S-117	L82-26	1619	Lenora	strong carb
McVittie	KL0530	S-120	L82-27	1619	Lenora	carb
McVittie	KL0532	S-116	SW83-13	1619	Lenora	carb
McVittie	KL0533	S-120	SW83-14	1619	Lenora	carb
McVittie	KL0535	S-119	SW83-16	1619	Lenora	brown and green carb
McVittie	KL0536	S-119	SW83-17	1619	Lenora	brown and green carb
McVittie	KL0539	S-121	SW83-20	1619	Lenora	strong carb
McVittie	KL0540	S-121	SW83-21A	1619	Lenora	strong carb
McVittie	KL0541	S-121	SW83-21	1619	Lenora	strong carb
McVittie	KL0543	S-121	SW83-23	1619	Lenora	strong carb
McVittie	KL0544	S-121	SW83-24	1619	Lenora	strong carb
McVittie	KL0920	S-142	OM-83-50	1619	Lenora	green carb with fine py not sampled - NB
McVittie	KL0921	S-150	OM-83-49	1619	Lenora	strong carb alt
McVittie	KL0921	S-151	OM-83-49	1619	Lenora	strong carb alt
McVittie	KL0923	S-143	OM-83-58	1619	Lenora	carb and chl interbands
McVittie	KL0925	S-141	OM-83-46	1619	Lenora	carb
McVittie	KL0926	S-137	OM-83-53	1619	Lenora	strong alt
McVittie	KL0926	S-138	OM-83-53	1619	Lenora	strong alt
McVittie	KL0928	S-127	OM-83-43	1619	Lenora	carb
McVittie	KL0928	S-144	OM-83-55	1619	Lenora	green carb - good alt - inadequately sampled - NB
McVittie	KL0932	S-140	OM-83-52	1619	Lenora	green carb - sil and/or alb and qtz veins (15-20%) - some py sections not sampled - NB
McVittie	KL0933	S-138	OM-83-48	1619	Lenora	weak to mod alt throughout some strong carb sections
McVittie	KL0954	S-137	OM-83-32	1619	Lenora	strong carb and green carb
McVittie	KL0957	S-132	OM-83-37	1619	Lenora	carb

Twp.	MNDM Hole #	Pallet No.	Co. DDH #	KL Assess File#	Company	Alteration (mainly carbonate)
McVittie	KL0958	S-132	OM-83-44	1619	Lenora	carb
McVittie	KL0959	S-133	OM-83-29	1619	Lenora	mod carb
McVittie	KL0960	S-125	OM-83-34	1619	Lenora	strong carb
McVittie	KL0960	S-126	OM-83-34	1619	Lenora	strong carb - one out of place box
McVittie	KL0961	S-133	OM-83-35	1619	Lenora	mod carb
McVittie	KL0962	S-134	OM-83-36	1619	Lenora	carb
McVittie	KL0965	S-134	OM-83-41	1619	Lenora	several boxes - minor fine py - some sampling
McVittie	KL0967	S-127	OM-83-39	1619	Lenora	carb
McVittie	KL0970	S-134	OM-83-40	1619	Lenora	carb
McVittie	KL0972	S-131	OM-83-68	1619	Lenora	carb
McVittie	KL0981	S-138	OM-83-63	1619	Lenora	minor carb
McVittie	KL0982	S-121	OM-83-64	1619	Lenora	strong carb
McVittie	KL0984	S-141	OM-83-70	1619	Lenora	carb
McVittie	KL0988	S-139	SW-83-26	1619	Lenora	needs to be checked - carb and chl interbands - some well min sections not sampled - NB
McVittie	KL1662	S-196	E-80-6	758	Edomar	strong carb - good Au potential
McVittie	KL1663	S-196	E-80-9	758	Edomar	strong carb - wide zone - good Au potential
McVittie	KL1664	S-196	E-80-5	758	Edomar	strong carb - good Au potential - good Au potential
McVittie	KL1664	S-197	E-80-5	758	Edomar	minor carb - too far down in pile - difficult to see - good Au potential
McVittie	KL1665	S-197	E-81-11	758	Edomar	strong carb - wide zone - good Au potential
McVittie	KL1666	S-197	E-80-10	758	Edomar	strong carb and possible hem syenite - good Au potential
McVittie	KL1668	S-199	E-80-3	758	Edomar	moderate carb
McVittie	KL1669	S-198	E-80-4	758	Edomar	moderate carb
McVittie	KL1670	S-199	E-80-14	758	Edomar	strong carb
McVittie	KL1671	S-199	E-80-8	758	Edomar	strong carb
McVittie	KL1671	S-200	E-80-8	758	Edomar	strong carb
McVittie	KL1672	S-199	E-80-7	758	Edomar	strong carb
McVittie	KL2258	S-40	SW-87-4		Eldor Res	strong carb
McVittie	KL2259	S-33	SW-88-5		Eldor Res	moderate to strong carb - wide zone - carb and chl rich interbands
McVittie	KL2259	S-34	SW-88-5		Eldor Res	moderate to strong carb - wide zone - carb and chl rich interbands
McVittie	KL2259	S-35	SW-88-5		Eldor Res	moderate to strong carb - wide zone - carb and chl rich interbands - beginning of hole porphyry (syenite?)
McVittie	KL2267	S-38	SW-87-3		Eldor Res	strong carb

Twp.	MNDM Hole #	Pallet No.	Co. DDH #	KL Assess File#	Company	Alteration (mainly carbonate)
McVittie	KL2267	S-39	SW-87-3		Eldor Res	strong carb
Midlothian	KL2377	S-88	G-27		Goldteck Mines	strongly carb conglomerate - wide zone - NB - at least 28 boxes
Midlothian	KL2377	S-89	G-27		Goldteck Mines	strongly carb conglomerate - wide zone - NB - at least 28 boxes
Midlothian	KL2378	S-81	G-28		Goldteck Mines	strong carb
Midlothian	KL2379	S-109	G-90		Goldteck Mines	weak carb
Moody	KL2293	S-69	MD-91-03		Goldbelt	strong carb
Morrisette	KL2460	G92-16	GF92-16	3396	Glencairn	strong carb (some boxes: 15299, 301, 303)
Morrisette	KL2461	GF92-17	GF92-17	3396	Glencairn	strong carb (some boxes: 15273, 77, 82, 83)
Morrisette	KL2462	S-303	GF92-18	3396	Glencairn	Box No. 13534 - 42 strong carb - follow up - also GF92
Munro	KL1003	S-290	839-15-1	74	Amax	carb
Munro	KL2323	S-91	MM.90-03		Am. Barrick	green carb
Munro	KL2324	S-89	MM.90-02		Am. Barrick	strong carb and green carb
Munro	KL2324	S-90	MM.90-02		Am. Barrick	strong carb and green carb
Powell	KL2300	S-30	221-89-1	2909	Newmont	strong carb
Powell	KL2302	S-84	221-89-3	2909	Newmont	mostly strong carb - most tags missing
Powell	KL2303	S-96	221-89-4	2909	Newmont	hematized trachyte
Powell	KL2304	S-80	221-89-5	2909	Newmont	strong carb
Powell	KL2305	S-78	221-89-6	2909	Newmont	strong carb - good Au potential
Powell	KL2305	S-79	221-89-6	2909	Newmont	strong carb - good Au potential
Powell	KL2306	S-83	221-89-7	2909	Newmont	strong carb - also carb and chl-rich interbands
Skead	KL2394	S-11	TG-91-4		Goldfields	minor carb
Tannahill	KL1813	S-216	C87-3	552	Condaka Metals	mod carb
Teck	KL1793	S-223	86-7	1006	Goldhunter	mod carb
Teck	KL1809	S-217	86-2	1006	Goldhunter	mod to strong carb
Tyrrell	KL0696	S-43			Canamax Resources	moderate to strong carb
Tyrrell	KL0700	A-16	DDH-83-6		Timmins Gold	Box No. 13670, 71 etc - check log - boxes too tight on top of one another
Tyrrell	KL0733	A-9			Sutherland & Associates	weak to mod alt (boxes 14238, 27 etc)
Tyrrell	KL0734	A-12			Sutherland & Associates	Box No. 14043, 44 - see log - boxes too tight on top of one another
Tyrrell	KL1052	A-14	DDH-83-5		Timmins Gold	Box No. 13630, 33,39, 28, 41, 42 - strong carb
Tyrrell	KL1126	A-15	DDH-83-4		Timmins Gold	Box No. 13630, 33,39, 28, 41, 43 - strong carb



LEGEND

- *Producing Mines*
  1. Barrick Gold Corporation - Holt-McDermott Mine (gold)
  2. Extender Minerals of Canada Ltd. - North Williams Mine (barite)
  3. Kirkland Lake Gold Inc. - Kirkland Lake Properties (gold)
  4. Newmont Mining Corporation and Teddy Bear Valley Mines Limited - Holloway Mine
- *Advanced Exploration Projects*
  1. Apollo Gold Corporation - Black Fox Project (gold)
  2. Contact Diamond Corporation - 95-2 Pipe (diamond)
- *Quarries*
  1. Kirkland Lake Rocks - Various Quarries (crushed stone)
  2. Miller Minerals - Bucke Quarry (limestone)
  3. A. Miron Topsoil Ltd. (crushed stone)
- *Mills*
  1. Barrick Gold Corporation (gold)
  2. Extender Minerals of Canada Ltd. (barite)
  3. Kirkland Lake Gold Inc. (gold)
  4. SMC (Canada) Ltd. (recycled precious metals)

Figure 1. Mining and milling in the Kirkland Lake District – 2004.

Figure 2. Property visits in the Kirkland Lake District – 2004.

Metric Conversion Table

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
		LENGTH			
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
		AREA			
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
		VOLUME			
1 cm^3	0.061 023	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.307 951	cubic yards	1 cubic yard	0.764 554 86	m^3
		CAPACITY			
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
		MASS			
1 g	0.035 273 962	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 747	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 622 6	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311 3	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 90**	t
		CONCENTRATION			
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	Multiplied by	
1 ounce (troy) per ton (short)	31.103 477	grams per ton (short)
1 gram per ton (short)	0.032 151	ounces (troy) per ton (short)
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.

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